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# Paper Men Oppose Reciprocity With Finland

## Sidney L. Willson, President of the American Paper and Pulp Association, J. S. Gill of Code Authority for Fiber Wallboard Industry and John P. Burke, President of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, Strongly Object to Any Change in Rates in Proposed Trade Agreement

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 13, 1935—R. E. Canfield, for the paper industry; J. S. Gill, for the code authority of the fiber wallboard industry; and John P. Burke, for the International Brotherhood of Pulp, Sulphite, and Paper Mill Workers appeared on Monday before the Committee for Reciprocity Information in opposition to any change in rates in the proposed trade agreement with Finland.

Mr. Canfield, in addition to a statement which he filed on behalf of S. L. Willson, president of the American Paper and Pulp Association, gave a picture of the general effect on the paper industry of reciprocal trade agreements in general and pointed out the extent to which Finland profits by its shipments of duty free paper and pulp to the United States.

Mr. Gill's statement opposed any change in the present duty on wallboard and said that the American industry must have greater rather than less protection. He stated that wallboard is sold to distributors in America at an advance of 75 per cent over its landed cost including commissions and that retail distributors can make a 25 per cent profit and still undersell the American manufacturer.

Mr. Burke defended the American manufacturers, complimented their attitude toward labor, and said that foreign competition must be restricted if the American mills can continue to operate and pay the present wages. He compared a minimum American wage of 45 cents an hour with the Finnish average of less than 17 cents an hour. He filed statistics and American wage rates showing that the American laborer must join with the manufacturers in seeking protection if both are to prosper.

### Statement for Mr. Willson

Following is the statement filed for Mr. Willson:

The fact that the cost of production of paper and pulp in Finland is the lowest of any nation in the world, except Japan, makes the proposed reciprocal trade agreement with Finland a matter which threatens most destructive results to the American Paper Industry.

The American Paper Industry opposes any changes whatever in the present tariff rates applicable to Finland. If any changes were to be made they should be in the way of increased duties on Finnish papers. In fact various divisions of the American Paper Industry are already invoking existing statutes in an effort to prevent the present competition which threatens the ability of the American producers to conform to existing codes with their increased scale of wages. Such actions include complaints under the Anti-Dumping Act, and also under Section 3 (e) of the National Industrial Recovery Act.

In view of the fact that Finland already has a large credit balance with us, we see no reason why the Paper Industry, in whose markets Finland competes with 91 per cent of its total exports to the United States, should be subjected to further damaging competition. According to a statement issued to the press by the State Department in relation to the proposed Finnish trade agreement, imports into the United States from Finland decreased from $11,225,433 in value in 1929 to $8,915,533 in 1933. Of these imports in 1933 over $8,120,000 were of paper, pulp and allied products. Of this $8,120,000 pulp and newsprint, both duty free, accounted for $7,919,792. The small balance of $200,000 was all that Finland exported to us in dutiable paper products, but in every item on this dutiable list Finland was able to pay the present duties and undersell the competitive American products from 20 to 25 per cent.

In the face of these figures from our own State Department, we can see no reason for any concessions to Finland in the paper field. On the other hand Finland produces so few commodities other than forest products that we can not conceive of any other item where the United States can make any substantial concessions.

Returning again to the State Department's statistics we find that while it is true that the dollar value of Finland's paper and pulp exports has decreased between 1929 and 1933, the volume of exports has increased. Paper and pulp have been exported to the United States in larger quantities, but at far lower prices than have ever before prevailed in the whole field of paper. Exports of duty free paper and pulp from Finland to the United States totaled 190,075 tons in 1929, but in 1933 the tonnage had increased to 265,564 tons.

*(Continued on page 25)*

# Wages in Paper Mills Increased 2c Per Hour

## NRA Approves Amendment to Make Minimum Wages for Males 40 Cents in the North, 37 Cents in the Central Zone and 32 Cents Per Hour in the South—Approximately 25,000 Workers Affected in the Paper and Pulp Industry—Paper Bag Wages Raised

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 13, 1935—President Roosevelt has signed an amendment to the paper and pulp code changing the basic northern zone wage rate to 40 cents per hour, the central zone rate to 37 cents and the southern zone rate to 32 cents. Similar changes were made in the paper bag code.

It is estimated here that the changed rates will effect between 25,000 and 30,000 workers in the paper and pulp industries and about 5,000 in the paper bag industry.

The amendments are the result of voluntary agreement between NRA and both industries, and represent the largest wage increase thus far effected through code revisions. They become effective as of February 6.

### An Increase of 2 Cents Per Hour

The amendments will increase by two cents per hour the present minimums for males of 38 cents in the North, 35 cents in the Central Zone, and 30 cents in the South. The increase also applies to female employees whose minimum under the code has been 33 cents in the North and 30 cents in the Central Zone. The minimum rate of 30 cents per hour for female workers in the South remains in the code unchanged.

Minimum rates of pay for office workers now ranging from $12 to $15 per week depending upon population, also have been revised upward. This class of employees will, under the amendment, receive $16 per week in the North, $15 in the Central Zone, and $14 in the South, regardless of population.

The exception permitting sub-minimum wages of not less than 90 per cent of the basic code rates, or wages equal to those paid prior to July 15, 1929, whichever are higher, is deleted from the codes under the approved revision.

The paper and pulp amendment is the direct result of a stipulation in the President's Executive Order approving the code, that further consideration be given the problem of determining the adequacy of the minimum rates. At that time the feeling was expressed that the minimum should not be less than 40 cents per hour.

In compliance with provisions of that Executive Order, public hearings were conducted in February 1934.

Subsequent agreement to the wage increase on the part of the Paper Industry Authority resulted in the promulgation of the amendment.

It is estimated that about 35,000 workers in the paper and pulp industry will directly benefit from the increase in minimum rates, or approximately 18 per cent of the employees in the North, 38 per cent in the Central Zone, and 38 per cent in the South will receive increases.

The normal number of workers in the industry varies between 123,000 and 125,000. Although the rate of production in November 1933 was far below the 1929 rate, it was estimated at that time that the code would restore employment to the 128,000 1929 figure.

### Amendment Will Increase Payrolls 4 Per Cent

The total payroll for May 1933 was at a rate of about $100,000,000. When the code was approved in November, 1933, the American Paper and Pulp Association estimated the pact would increase that rate by about $70,000,000. NRA's Research and Planning Division estimates the amendment just approved will increase the industry's payrolls by 4 per cent.

Because of the close relationship between the paper and pulp, and the paper bag industries, and because the wage provisions in the two codes are identical, the amendment to the latter code provides for the same rates of increase.

The paper bag code also provided for a subsequent hearing to determine the adequacy of the minimum pay schedules. The code stated that in the event any of the paper and pulp wage and hours provisions were amended, such revision should also apply to the paper bag code.

It is estimated that approximately 3,000 workers will be given pay increases as a result of the paper bag code amendment.

In view of provisions in both codes providing for equitable adjustments of wages above the minimum, it is expected the amendments will eventually affect 100,000 employees in the paper and pulp industry, and 5,000 in the paper bag industry.

### Schedule As Revised

Following is schedule A, revised, of the paper and pulp code:

Article V, Section 1, of said Code is hereby deleted in its entirety and in lieu thereof the following is inserted:

1. The minimum rate of wage of any worker referred to in Sub-sections (a), (b), (c), and (d) of Section 1 of Article IV shall be as follows.

(a) In the Northern Zone, which shall consist of all the territory of the United States except the states described in Sub-sections (b) and (c) hereof: Male: 40 cents per hour; Female: 35 cents per hour.

(b) In the Central Zone, which shall consist of the States of Delaware, Maryland, Virginia, West Virginia, Kentucky, Tennessee, North Carolina and the District of Columbia:
Male: 37 cents per hour; Female: 32 cents per hour.

(c) In the Southern Zone, which shall consist of the States of South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas and Texas: Male: 32 cents per hour; Female: 30 cents per hour.

Article V, Section 5, of said Code is hereby deleted and in lieu thereof the following is inserted:

5. The minimum rate of wage for all employees described in Sub-section (f) of Section 1 of Article IV shall be as follows:

(a) In the Northern Zone as defined in Section 1 hereof, $16.00 per week.

(b) In the Central Zone as defined in Section 1 hereof, $15.00 per week.

(c) In the Southern Zone as defined in Section 1 here, of $14.00 per week.

### Executive Order

In signing the executive order putting into effect the new

wage rates under Article V of the paper and pulp code, the President said:

Pursuant to authority vested in me by Title I of the National Industrial Recovery Act, upon due consideration of the facts, and upon the report and recommendation and findings of the National Industrial Recovery Board with respect to the adequacy of the minimum wages established in the Code of Fair Competition for the Paper and Pulp Industry as approved by me on November 17, 1933,

I, Franklin D. Roosevelt, President of the United States, do hereby adopt and approve the said report, recommendation and findings of the National Industrial Recovery Board, and

Do HEREBY ORDER that the Code of Fair Competition for the Paper and Pulp Industry be and the same is hereby amended to the extent set forth in Schedule A attached hereto and hereby made a part hereof, and,

Do HEREBY FIND that said amendment and the Code as constituted after being amended comply in all respects with the pertinent provisions and will promote the policy and purposes of said Title of said Act, and,

Do HEREBY ORDER that said amendment be and it is hereby approved, and that the previous approval of said Code is hereby amended to include an approval of said Code in its entirety as amended.

## Deerfield Glassine Reorganization

BOSTON, Mass., February 11, 1935—The State Department of Public Utilities has approved the plan of reorganization of the Deerfield Glassine Company, which supplies electricity for public use in the town of Monroe.

The company's petition in bankruptcy was approved by the United States District Court August 2, 1934. Charles N. Stoddard of Greenfield was appointed permanent trustee of the company and the plan of reorganization was drawn up and later approved by the court.

The reorganization plans call for the issuance of $600,000 first mortgage 5 per cent 15-year cumulative income bonds to replace the present outstanding $600,000 first mortgage 6½ per cent bonds. Present outstanding unsecured claims against company, amounting to $433,700, are to be exchanged for 5 per cent cumulative preferred stock, par value $100. It is proposed to issue 4500 shares of common stock of the new company for the present 9070 shares of prior preferred stock. For the present outstanding 5600 shares of preferred stock, it is planned to issue 280 shares of common stock.

The reorganization plans do not contemplate any remuneration to present common stockholders. In submitting the plan to the state utilities department, the reorganization officials said: "It being clear that there are not sufficient assets to cover all debts of the company plus the outstanding prior preferred and preferred stock, there is no equity for common stock. No provision, therefore, is being made in the plan for it."

## Crystal Tissue Co. Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, February 11, 1935—At the annual stockholders' meeting of the Crystal Tissue Company of Excello, Z. W. Ranck was re-elected president and a recently announced development program to cost $50,000 was approved.

Other officers elected are: E. E. Grant, vice-president; E. A. Cahill, secretary; W. O. Barnitz, treasurer, and these, with D. F. Peck of Chicago, Illinois, will constitute the board of directors.

## Great Northern Makes Good Report

The Great Northern Paper Company had indicated net earnings of 60 cents a share on the outstanding 998,330 shares of $25 par value in 1934 calendar year. The company issues no income statement, but comparison of balance sheets dated Dec. 31, 1934 and Dec. 31, 1933 shows a reduction in surplus of $405,517, or from $17,075,101 to $16,669,584. The company, however, paid dividends totalling $1 a share. Consequently the indicated profit before dividends was $592,813, or 60 cents a share.

In 1933, after a write-off of inventory to market prices of $656,728, the company earned, as determined by balance sheet comparison, $121,430, or 12 cents a share, while in 1932 there was an indicated loss of $477,461 after an inventory write-down of $1,836,786.

Cash and marketable securities at the end of 1934, totalling $5,023,872, were $830,081 less than at the end of the preceding year. Total current assets on Dec. 31, 1934, were $12,989,169, current liabilities $630,141, and net working capital $12,359,028 compared with $13,428,972 on Dec. 31, 1933.

Balance sheets of the company as of December 31, compare as follows for the past three years:

| | 1934 | 1933 | 1932 |
|---|---|---|---|
| **ASSETS** | | | |
| Cash and market secs. | $5,023,872 | $5,853,953 | $4,441,417 |
| Accts. & notes rec. | 1,941,335 | 1,915,156 | 1,724,088 |
| Raw mats, sups & mfg. stk. | 6,023,962 | 6,109,337 | 8,118,267 |
| Plants and props. | 27,603,808 | 26,908,590 | 27,589,262 |
| Invests. in af, & sub. cos. | 1,929,189 | 2,036,397 | 2,113,983 |
| Other invests. | 132,666 | 135,296 | 139,033 |
| Deferred. chgs. | 58,143 | 154,095 | 173,318 |
| Total | 42,712,975 | 43,112,825 | 44,299,368 |
| **LIABILITIES** | | | |
| Accounts pay. | 369,592 | 221,502 | 238,932 |
| Timberland purch. oblgs. | 175,000 | 213,750 | 218,750 |
| Tax reserve | 77,516 | ..... | ..... |
| Other current liab. | 8,034 | 14,222 | 102,685 |
| Deferred liabs. | 455,000 | 630,000 | 843,750 |
| Capital stock (998,330 shares) | 24,958,250 | 24,958,250 | 24,958,250 |
| Surplus | 16,669,584 | 17,075,101 | 17,952,001 |
| Total | 42,712,975 | 43,112,825 | 44,299,368 |

## U. S. Gypsum Co. Buys Arborite Co.

The United States Gypsum Company has purchased from the Arborite Company, its plant for the manufacture of Insulating board products, located at Lisbon Falls, Maine.

The Arborite line of insulating products, which includes insulating board, lath and tile, is well and favorably known to the building industry and will be continued. In addition the United States Gypsum Company's brands of insulating board products, Red Top and Weatherwood, will be furnished from Lisbon Falls.

Acquisition of the Arborite Company is for the purpose of rounding out the national distribution facilities of the United States Gypsum Company on insulating board products to the end that it may give the building industry uniform service in all areas. The original insulating board products plant of the Company is located at Greenville, Miss.

## Simplified Practice for Paper Tubes

WASHINGTON, D. C., February 11, 1935—The Division of Simplified Practice, National Bureau of Standards, announced today that Simplified Practice Recommendation RI43-33, Paper Cones and Tubes, has been reaffirmed by the Standing Committee of the industry.

This simplification program, which was proposed and developed by the industry, is concerned with paper cones and tubes for winding various kinds of yarn and thread and was originally effective from January 1, 1933.

# Activities of Wisconsin Paper Manufacturers

## Consolidated Water Power & Paper Co. Introduces New Fine Paper Called Pictorial Gloss—Made by Processes New to the Trade, the Paper Possesses Unusual Characteristics—Several Building Projects Planned by Paper Mills for Early Spring

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., February 11, 1935—Marketing of a new fine paper called Pictorial Gloss has been started by the Consolidated Water Power and Paper Company, with mills at Wisconsin Rapids, Stevens Point, Appleton, and Biron, Wis. Manufactured under United States patents controlled by Consolidated, this product is announced as an outstanding accomplishment in paper making. It is made by processes radically new to the trade, and has characteristics different from any other paper made. Elaborate machinery of a type never before erected was specially designed to work out the intricate processes required.

In its formal announcement issued to the trade this week, the company states:

"Pictorial Gloss, manufactured by a revolutionary, new patented process, is recognized as an outstanding achievement in the art of fine paper making. The finish of this versatile sheet is smooth and satin-like, with little tendency to reflect glare.

"Experience has shown that Pictorial Gloss offers brilliance in printing unequaled in its price field, and that it gives perfect reproduction of halftones in monotone or multicolor. Its remarkable affinity for ink insures good coverage, while its high opacity prevents 'show-through' even on solids. Beautiful results can be obtained on this grade, be it letter press or offset printing, flat bed or rotary.

"The non-fibrous surface of Pictorial Gloss has quality and appearance which permit its use as a worthy substitute for enamel sheets, with consequential substantial saving in paper cost.

"Pictorial Gloss is ideal for magazines, catalogues, calendars, booklets, broadsides—in fact, wherever fine detail reproduction is necessary. It is also highly satisfactory for hectograph purposes."

### Paper Mill Additions Planned

Several building projects are on the early spring program. Kimberly-Clark Corporation has begun construction of a one-story storage and shipping building adjacent to its Lakeview mill at Neenah, Wis. It is 80 by 160 feet in size and of fireproof construction. Company labor is being used.

Approximately $150,000 will be spent by the Minnesota Mining and Manufacturing Company, of St. Paul, Minn., on its raw material plant for sandpaper and abrasive stocks at Wausau, Wis. Plans provide for an addition, one story, 30 by 300 feet, to be used for storage and distribution. A new head house is to be erected also, and other minor repairs and alterations will be made on the plant. Toltz, King & Day, Inc., St. Paul, is the consulting engineer.

Construction of a one-story addition will be started soon by the Thilmany Pulp and Paper Company, Kaukauna, Wis., to its mill. This unit will be used for additional storage and shipping purposes.

### Whiting-Plover Paper Co. Elects

Joseph H. Miller, manager of the Whiting-Plover Paper Company, Stevens Point, Wis., was elected at the company's annual meeting at Menasha, Wis., last week as treasurer of the company. He has been with the company for twenty-five years, starting as a stenographer. He has attained a prominent place in the paper manufacturing industry.

The official personnel of the company otherwise is unchanged. E. A. Oberweiser was re-elected president. He also had served previously as treasurer. Frank B. Whiting continues as vice president, and George Hilton of Oshkosh, Wis., as secretary.

Annual reports showed a marked improvement in business in 1934 as compared to 1933. The management looks ahead with confidence and believes the general improvement in business will be reflected in its operations.

### News of the Industry

Some additional signs of pickup have been shown during the past week. A rush of orders at the Valley Iron Works Company, Appleton, Wis., necessitated the addition of thirty skilled workers, according to R. A. Peterson, treasurer. Approximately 100 employees are now on the payroll, and some departments are operating twenty-four hours a day. Mr. Peterson attributes the new business to a general upturn in the pulp and paper industry. Mills appears to be more encouraged, and are showing a tendency to fulfill their long anticipated desire to replace obsolete machinery with modern equipment. The increase in business is the largest in two years.

The Badger Paper Excelsior Company has been organized at Milwaukee, Wis. It will deal in paper specialties, waste paper, etc.

Earnings of the Kimberly-Clark Corporation, Neenah, Wis., equalled $4.30 a share on preferred stock for 1934, after all charges were deducted, according to the annual statement. This compares with $4.46 a share for 1933.

Louis Taylor, formerly employed by the Oswego Falls Corporation, Oswego Falls, N. Y., has been appointed to the staff of the Institute of Paper Chemistry, Appleton, Wis. He will serve as a technical assistant in the code testing department. Mr. Taylor attended Syracuse University. One of the visitors at the Institute last week was L. J. Meunier, vice president and general superintendent of the Kieckhefer Container Corporation, Delair, N. J.

The final session was held last week by the engineering staffs of the Neenah and Kimberly, Wis., mills of the Kimberly-Clark Corporation, of an 18-week course in economic trends, conducted by the extension division of the University of Wisconsin. This meeting followed a dinner at Conway Hotel, Appleton, Wis. The speaker was Prof. R. J. Colbert, head of the economics department of the university. The course has been conducted by Prof. John L. Miller, and the engineers plan to enroll in another one next fall.

The estate of the late Diedrich W. Bergstrom, Jr., who was vice president of the Bergstrom Paper Company, Neenah, Wis., is valued at approximately $125,000, according to the petition filed in probate court at Oshkosh, Wis. It consists of personal property of the approximate value of $100,000, and real estate with a probable value of $25,000. Mr. Bergstrom died about two weeks ago after a brief illness.

# Quebec Drafting Newsprint Legislation

## Although Not Yet Disclosed, Terms of Measure to be Presented to Assembly Are Known to be Drastic—Attitude of Province Follows Lines Suggested to Federal Banking Committee at Last Federal Session by Sir Herbert Holt

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., February 11, 1935—The Quebec Government is engaged in drafting legislation to deal with the newsprint situation. The terms of the bill to be presented to the Legislative Assembly are not yet disclosed, but it is known definitely that they are to be drastic. From sources close to the Government comes this statement: "Newsprint manufacturers seem to have no confidence in each other in the matter of making what was termed in other days 'a gentleman's agreement,' hence the province will step in and make the agreement for them all, and provide for its execution."

This attitude on the part of the Government towards the newsprint industry follows much along the lines suggested to the federal banking committee at the last federal session, when Sir Herbert Holt told the committee that as regards the newsprint industry there should be government intervention.

### Newsprint Exports

Figures issued by the Dominion Bureau of Statistics for the calendar year 1934 show that while the tonnage of newsprint exports rose nearly 30 per cent over that of 1933, the value increased only to the extent of about 19 per cent. The totals were 2,399,624 tons, valued at $82,078,659, compared with 1,838,104 tons, valued at $62,200,515. The exports in December amounted to 245,136 tons, valued at $8,549,704, compared with 185,637 tons, valued at $6,437,759 in December, 1933.

### Canadian Newsprint in Panama

J. A. Strong, Canadian Trade Commissioner in Panama, reports that Panama's imports of newsprint are now supplied entirely from Canada. He remarks: "Exports of newsprint from Canada to Panama for the year ending September 30, 1934, amounted to 665 tons valued at $32,885 as compared with 256 tons valued at $10,453 for the corresponding period in 1933. The increase shown was at the expense of the Scandinavian countries.

"Imports of paper of all classes into Panama in 1934 amounted to 1,559 tons, of which 954 tons was printing papers including newsprint, 321 tons wrapping paper, and 50 tons toilet paper. Of the 321 tons of wrapping paper, 79 tons were supplied by the United States and 239 tons by European countries.

"Imports of paper bags during 1934 amounted to 268 tons, of which 150 tons came through New York and 86 tons through New Orleans. Canada participates in this trade."

### Canadian Forestry Association

At the annual meeting of the Canadian Forestry Association, held here on Thursday, Henri Kieffer, chief of the Forest Protection Service, Department of Lands and Forests, Quebec, was re-elected president for 1935. Other members of last year's board were re-elected, with the following new directors: Hon. J. H. McQuarrie, Minister of Natural Resources, Nova Scotia; S. L. de Carteret, Quebec; D. B. McCrae, editor of the Regina, Sask., Post; Hon. George Hoadley, Alberta.

Robson Black gave an account of the work done by the association throughout Canada. He spoke of the success attending lecture hours in Quebec and New Brunswick and continued:

"While British Columbia, the home of the Junior Warden movement has appointed 4,000 boys as volunteers, another 2,000 have been at work in Eastern Canada, with an additional 500 established in Newfoundland by request of the Newfoundland Forest Patrol. These lads, carefully selected and continuously encouraged in their duties as conservators and students of conservation, are the nucleus of a coming army of youths lending a hand to the safeguarding of forests and wild life." While it was not intended that the wardens should lose their identity as primarily a working force of the association, there was a movement to have them placed under the care of the Boy Scouts, he said. Three thousand rural schools were working in active co-operation with the association, and the monthly magazine was supplied to the class-rooms. The membership of the association was 13,000.

## Boston Paper Market Fairly Active

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 11, 1935—The Boston paper market was moderately active during last week, on the whole. The market in general was in a healthy condition. Bonds and ledgers were sold in fair quantities. With some, business was a little slow, but with others, fair to good. Commenting on January, one concern reported making sales in twice the volume of the corresponding month in 1934. Wrapping paper and specialties moved in fairly good volume. In box boards a fair amount of business was transacted, with some improvement developing. Values continued steady.

Additional betterment in the paper stock market developed, with price advances in a number of lines. Although the recent snowstorm was reported not to have affected the price of mixed papers because there was so much material on hand, highways continue to be blocked so much that deliveries are delayed. All the heavy users of mixed papers are now paying .20 for this commodity. Old newspapers are firm at .22½ @ .30. Gunny bagging was active, with the demand from Western buyers and not from the South. Sales of domestic gunny No. 1 were made at 1.25, compared with a previous quotation of 1.15 @ 1.20. There was no increase in the price of foreign gunny No. 1, which remained at 1.75 @ 1.90. In old domestic rags, roofing stock also advanced, the No. 1 grade rising to 1.05 @ 1.12½ against a previous price of .95 @ 1.00, No. 2 to .90 @ 1.03 against .85 to .90, and No. 3 to .78 against .65 @ .70.

## Mohawk Paper Board Co. Chartered

[FROM OUR REGULAR CORRESPONDENT]

NORTH ADAMS, Mass., February 11, 1935—The Mohawk Paper Board Company has been incorporated with a capital stock of 200 common shares of no par value. Bernard F. Collins is president; Irene E. Cummings, 102 Liberty street, North Adams, treasurer, and Clifford A. Davis is the third incorporator.

# Philadelphia Paper Market Fairly Buoyant

## Demand for Various Standard Grades of Fine and Coarse Papers Well Sustained—Report of Scott Paper Co. Shows Great Increase In Net Sales During 1934 Compared With Preceding Year—Another High-Speed Machine Planned

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., February 11, 1935—February has gotten off with a good start in both fine and coarse divisions of the paper trade. On all sides, in this composite picture, the reply to our query as to business conditions is—"Business is keeping up fine;" "Business is keeping up with the level of January;" "Wonder if it is going to keep up." A significant factor in this stimulus is attributed to the increase in advertising appropriations with definite allocations for direct-mail advertising and catalogs, which of necessity creates demand for paper.

### Scott Paper Co. Plans Additions

Scott Paper Company reports for 1934 net profit of $905,757, after all charges, equal, after preferred dividends, to $4.53 a share on the common stock, compared with $825,948, or $4.01 a common share, in 1933. Net sales amounted to $9,011,644, against $7,612,940 in the preceding year. Thomas B. McCade, president, said the sales showed an increase of 19.3 per cent over 1933 and established a new high record for the company. "In order to meet 1935 sales requirements an appropriation of approximately $1,000,000 was authorized to extend the company's manufacturing facilities," he added. The additions include a new modern factory building and another wide, high-speed paper making machine. Five such machines are now operating.

### Unique Paper Display

Attention is arrested by the display in the showcase as you enter the nicely appointed office of Paper Merchants, Inc., 140 North 6th street, of an old Ledger made in 1879 by a Philadelphia bookbinder and used by a Philadelphia merchant throughout the years of 1879, 1880 and 1881—virtually 56 years ago—which contains the names of many of the old concerns of Philadelphia. Included in the display are samples of Brown's linen ledger made in 1888, and some samples of the same grade of paper made in 1935. These are side by side with the old Ledger for the purpose of comparison. It is a very unique merchandising idea and is attracting widespread attention. There are also shown advertising books and pamphlets of the L. L. Brown Paper Company, and some pure white half-stock from which Brown's ledger is made. The showcase is illuminated and is changed regularly with similar exhibits and displays of the Paper Merachants' regular lines.

### News of the Trade

Clark & Co., New York City, General Sales Agents for Crocker Burbank Uncoated Papers, have just announced the appointment of R. Peel Bentley, president of the Bentley Paper Company with offices in the Ledger Building, Philadelphia, distributor for the Crocker Burbank Uncoated papers, which include Hermes Book, Elseca Book, Coverdale, Sylvanus, Saturn Book, Saturn Book W/M—Wove and Laid—Crobank E. F., Crobank Super, Crobank Eggshell, Crobank 4-Color Super, Crobank Antique, Crobank Super Cover, Crobank M F Litho, Crobank Super Litho, Ashby E F, Ashby Super, Ashby Eggshell and Crobank Offset.

A bandit waylaid Miss Selma Levyn, 19, at 2nd and Pine streets during the week, felled her with a blow on the head and escaped with a payroll of $850 which she was taking to the M. Kardon Paper Box Co., 224 Pine street, her employers. The assault was staged directly across the street from the firehouse, and Fireman Hugh J. Gallagher, who witnessed the theft, led in the chase.

Edward A. Keller, vice president in charge of sales, of Garrett-Buchanan Company, has been confined to his home for several weeks suffering from a heart condition and high blood pressure. It is sincerely hoped by his many friends in the trade that he will soon be at his desk to greet them with his characteristic graciousness.

Otto W. Renner, of the H. C. Davis Paper Company, in the Drexel Building, is on the sick list, and his many friends are looking forward to his speedy recovery.

W. W. Seary, vice president of D. L. Ward Company, is suffering from an attack of grippe, but at this writing is much improved.

Norbert A. Considine, president of the Paper Trade Association of Philadelphia, will be accompanied by T. H. B. Smythe, immediate past president of the association, to the N. P. T. A. convention in New York. Mr. Smythe is alternate delegate, supplanting Nathaniel Saxe who is sojourning in the south.

In reporting appointments of Commodity Committee chairmen for the Coarse Division of the Paper Trade Association of Philadelphia, the appointment of J. H. Bancroft as chairman of the Twine Committee was inadvertently omitted.

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## S. E. Meyers Forms Control Equipment Corp.

Sidney E. Meyers, who for the past several years has been identified with the development and sale of consistency control equipment for the paper industry, has resigned his position with Merritt Engineering and Sales Company of Lockport, N. Y. He has formed the Control Equipment Corporation which will manufacture and market improved equipment for the continuous and automatic control of the various phases of pulp and paper stock preparation, particularly such equipment as is needed for reliable consistency control.

Henry V. Turner is president and treasurer, Roland I. Mead is vice president and sales manager and S. E. Meyers is secretary and chief engineer of the company.

The offices of the company are at 1707 Main street, Buffalo, New York.

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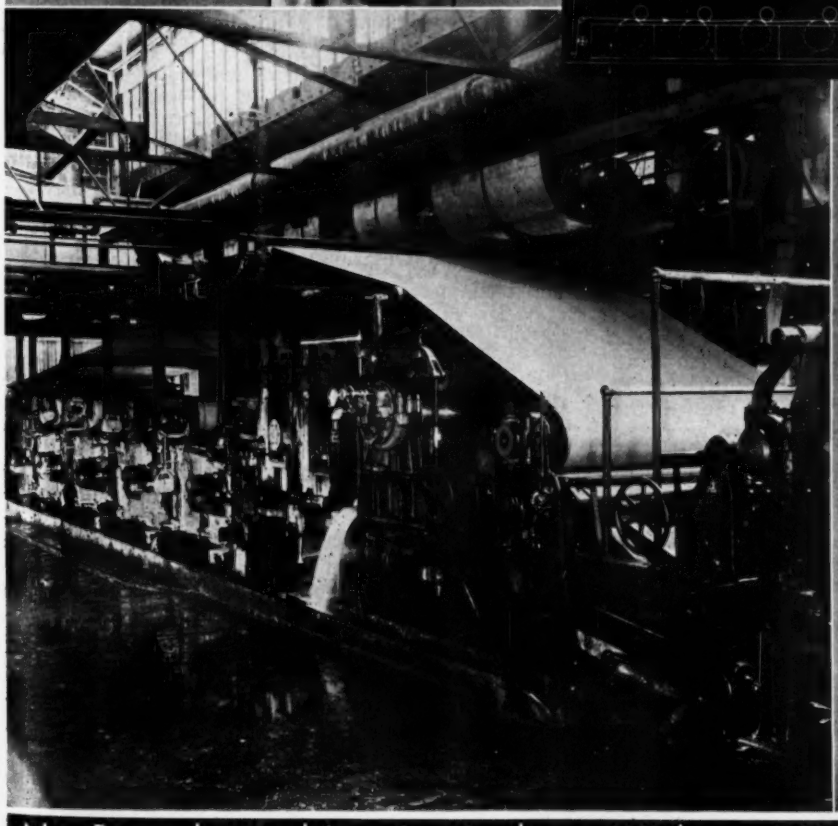
## Dismiss Move to Oust M. & O. Receivers

MINNEAPOLIS, Minn., February 11, 1935—A petition seeking removal of C. T. Jaffray and R. H. M. Robinson as receivers of the Minnesota and Ontario Paper Company was dismissed last week by Federal District Judge Joseph W. Molyneaux. Charging irregularities in the conduct of the company's affairs, the petition was filed a year ago by the Backus-Brooks Company. Attorneys for the petitioners failed to appear when the matter, after many delays, came on for hearing.

# DOWNINGTOWN

## Duo-Dehydration Installed

For more than ten years, a suction drum roll had been operating on the machine as shown in the diagram in the upper left. Over three years ago, the suction drum roll was removed along with the battery of primary presses. Downingtown Duo-Dehydration, consisting of two Extractor Units and a Suction Primary Press, was installed as shown in the diagram and photo below. Aside from the benefits listed, the modernization was easily installed, for the Extractors require no drive, no pump, and no power, and easily fit in the space occupied by the discarded rolls. More than 15 suction drum rolls have been replaced by Extractors — names of mills sent on request. The Downingtown Mfg. Co., Downingtown, Pa. *Duo-Dehydration is covered by patents granted and applied for.*



**Tonnage Increased 25%**

**Felt Cost Reduced 40%**

**Quality Improved**

&

No Board Machine is Modern *Without* DUO-DEHYDRATION

# Demand for Paper Improves In Toronto

## Business In Practically All Divisions of Paper Industry Shows Advance Over Corresponding Period of Preceding Year—Close Observers Predict 1935 Will Be Year of Gradual Recovery and That Normal Conditions Will Be Reached By 1936

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., February 11, 1935—Business in general lines of paper continues to show an improvement over corresponding weeks of last year and collections are reported very good. Those who have given close study to the situation believe that 1935 will be a year of gradual recovery in the paper arena and that by 1936 normal conditions will be reached. Paper box manufacturers are fairly busy and report a good outlook, while book and writing mills show an increase in orders. The annual meetings of a number of companies will be held in the near future and it is expected that the reports will reveal a considerable gain in net earnings over those of 1934.

### Pulpwood Transportation

A question of much interest to local mills and distributors has been brought up by Frank Byrne, who is one of the largest shippers of pulpwood in the province of Quebec. Mr. Byrne has sent out a letter calling for an early and fair revision of railroad rates on forest products. He says that the present costs of transportation represent, in many cases, from 60 to 65 per cent of the sale price, with the producer having to content himself with but 35 to 40 per cent for his manufactured product. Mr. Byrne asks why Western Canada and the Maritime provinces have been given preferential transportation rates on their manufactured goods time and again while Ontario and Quebec are refused similar reductions on their forest commodities.

Adoption of freight tariff based upon the volume of forest products, instead of the present weight basis is advocated by Mr. Byrne who stresses the complete readjustment of rates of transportation on wood goods, according to a well conceived and equitable formula, necessary for progress to be made towards economic recovery and also necessary for the progress and prosperity of a large part of the rural population.

In an interview, a leading Toronto shipper said that he believed the freight tariff should be established on the basis of volume instead of weight. Such a change would result in a considerable improvement over the present situation. Two primary reasons, he pointed out, for such an alteration were that wood contains a certain percentage of water ranging anywhere from ten to fifty per cent, depending on circumstances, and that it is less compact than rival materials, having for instance a density very much inferior to that of steel.

### Wrapping Paper Distributors Meet

At the annual meeting of the Wrapping Paper Distributors Association of Canada, under the chairmanship of H. E. Livingstone, president, the following officers were elected for the coming year—President, R. H. Bryan, MacGregor Paper and Bag Company, Inc., Montreal; First Vice President, L. E. Charles, Victoria Paper and Twine Company, Ltd., Toronto; Second Vice President, J. B. Larkin, Kilgour's Ltd., Montreal; Treasurer, N. V. Morrison, W. J. Bell Paper Company, Ltd., Toronto; Secretary, C. V. Hodder, Toronto. At the annual dinner, the representatives of the Wrapping Paper Mills were the guests of the distributors. T. V. Bell of the T. V. Bell Company, Ltd., Montreal, gave an interesting address and at the head table were: General J. B. White, president of the Canadian Pulp and Paper Association; H. Crabtree, of Howard Smith Paper Mills; Robert Currie, of Dominion Paper Company; R. W. Steele, of the Brompton Pulp and Paper Company, J. O. Chenevert, of St. Maurice Valley Paper Company; and S. J. Frame. Among the guests were A. E. Cadman and Louis Lemieux, of the Canadian Pulp and Paper Association, together with representatives from the various paper mills.

### Toronto Carton Council Elects

The annual meeting of the Toronto Carton Council was held recently at the Royal York hotel, Toronto, and F. A. Fielder, of the Fielder Paper Box Company, Ltd., was elected chairman of the council for the coming year. The business session was followed by a dinner and entertainment on the roof garden to which the active and supply members of the Canadian Paper Box Manufacturers Association in Ontario were invited. F. W. Fisher, president of the association, announced that the annual convention would be held at the Seigniory Club, Quebec, on June 24 and 25.

### News of the Trade

It is expected that the dues on pulpwood will be soon reduced in order that operators in Ontario may cut larger quantities of wood. In connection with the negotiations for the opening up of the Sturgeon Falls, Espanola and Fort William paper mills for the manufacture of sulphides in the creation of artificial silk it is stated that before the scheme can be worked out, it will be necessary to decrease the dues on pulpwood.

G. T. Clarkson, receiver of the Abitibi Power and Paper Company, Toronto, said so far the negotiations had been only of a tentative nature and, as a result of too early announcement the bondholders of the company may hold out for a much higher price for the mills than they otherwise would have. The Hon. Peter Heenan, Minister of Lands and Forests, declares that the dues will be brought down so that Ontario will recover the lost market for sulphide.

At the annual convention of the Canadian Lumbermen's Association held in Montreal on February 5 and 6, W. R. Beatty, of the Consolidated Paper Corporation, Pembroke, Ont., was elected president for the coming year. Mr. Beatty is also head of J. B. Kemp, Ltd., which is one of the largest buyers and dealers in pulpwood in Eastern Ontario.

W. J. Finlay, proprietor of the paper mills at Strathcona, Ont., has been in the business for 63 years. Fifty years ago when his father was superintendent at Newburgh, he was his assistant. He says that, in pioneer times, it took four days to make newsprint which is now turned out in less than twenty-four hours. The Strathcona plant made the first roll of paper for the *Toronto Globe*. Recently Mr. Finlay addressed the Rotary Club, of Napanee, Ont., when he gave some interesting details concerning his experience as a paper manufacturer.

Word has been received by his friends in Toronto that Gilbert Garnett, manager of the Saskatoon, Sask., branch of the Mid-West Paper Sales, Ltd., has been promoted to be manager of the credit department of the company with head office in Winnipeg, to which position he will be transferred this month.

# Chicago Paper Market Displays Steadiness

## Demand for Various Standard Grades of Fine Paper Well Sustained—Book, Cover, Bond and Ledger Papers Moving Freely—Request for Kraft Paper Slightly Better—Ground Wood Paper Business Improves Materially—Paper Board Situation Unchanged

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., February 11, 1935—Despite a comparative decrease in retail business in Chicago during the past thirty days, the paper market supplying that trade has given a fairly good account of itself. A gratifying degree of steadiness has come into the market as far as demand is concerned and, though local sales representatives and jobbers are pressing hard for Spring business, they are also concentrating on some trade custom problems which, when solved, are expected to further benefit business.

The ground wood market continues to feel the effect of the newsprint situation, although there are some cases of ground wood concerns where business has improved materially over last week. The fine paper business is said to be showing the same steadiness as of last week. Bonds and ledgers indicated the general business betterment. Books and covers and various advertising papers also reacted favorably toward more comprehensive spring merchandising plans on the part of important business concerns. Kraft papers were reported to be holding fairly well and there is no indication of any demoralization which some few expected in the light of recent developments. Kraft jobbers are finding that the local market is also opening up a bit. Paper board is virtually unchanged over last week. Waste papers were reported as dull for the most part.

### Quantity Differentials

Rather pronounced efforts to coordinate the various paper associations in certain trade customs which affect various branches of the industry are being made in the Chicago area. Individual paper executives have often pointed out certain discrepancies which might be eliminated to the mutual benefit of all concerned. The Mid West Division of the Salesmen's Association of the Paper Industry, one of the leading organizations discussing this matter, is reported to be preparing a chart showing the inconsistencies in the matter of quantity differentials as applied to the various associations and with a similar problem taken as the basis for the facts the chart is expected to bring out.

"The benefits of a quantity differential are so great," says one mill representative, "that all of the associations should adopt similar differentials for these small quantity orders. Our group has such a differential which, while it has not entirely eliminated small orders, has permitted us to avoid a great deal of unnecessary cost, which is often times the difference between profit and loss. At the present time, for example, there is a quantity differential in books and writings and ground woods among others. Sulphite and kraft, to cite two cases, do not have this quantity differential. It is our belief that the differential is so beneficial that these latter groups should adopt it. Some may say that kraft orders are largely outside of this differential problem but there is no reason why those small orders that do come in should not benefit by the arrangement."

Merchants, say some executives, have always handled this small order problem as called for by quantity differentials. They may buy on small order bases but re-sell on the ton lot—or more—basis. There is no reason, say those who want to see these inconsistencies eliminated as well as inconsistencies emanating from other trade customs, why the associations cannot work together to bring about this coordination. Members of the S. A. P. I. and others who have commented on the matter feel that adoption of the quantity differential principle in all effected branches of the industry would be a forward and progressive step which could very well prove a step in solving other problems of a similar nature and when inconsistencies have developed.

### New Paper Tubing Introduced

From East St. Louis, Ill., comes word of efforts being made by the Midland Products, Inc., located just across the river in St. Louis, to effect an important modernization process in relation to the manufacture of paper tubing. Midland Products, Inc., makers of hand-made bags, have introduced a new tubing which seems to solve much of the resistance against previous manufacturing procedure. The new tubing can now be made, by a special machine, for one to three inch width in steps of ⅛ inch and from three to ten inch width in steps of 1/16th inch. This opens up a wide variety of new uses for this type of paper product. The tubing is made from kraft paper though it is reported that any paper of 25 pound base and over, is suitable. In addition to manufacturing tubing of a single sheet, Midland has also perfected a process whereby combinations of paper may be used, particularly where display of the product is desired but wherein protection is a very desired essential.

### News of the Trade

The Beacon Paper and Specialty Company has recently moved from 2037 West Wabansia Avenue, Chicago, to larger and more modern quarters at 2025 West North Avenue. The new offices and warehouses, made necessary because of business expansion, are only a short distance from the old location.

The Cromwell Paper Company, well known manufacturers of a complete line of tympans, shipping containers, etc., has added a new line which is expected to prove exceptionally popular to a wide market. Cromwell has added a cedarized moth proof bag which is said to be unusually effective in providing protection for woolen goods and clothing. Immediate efforts are being made to merchandise this new product for spring business.

The Louis Allis Company, of Milwaukee, has just issued three new bulletins describing various motors of their manufacture. These are bulletins No. 507 describing their line of direct current motors; bulletin No. 510 describing their totally-enclosed fan-cooled motors and bulletin No. 514 describing single phase capacitor motors. The bulletins are attractively printed in colors and are complete with engineering and other important data pertaining to these types of motors. The paper industry, if interested, may secure copies by writing the company at Milwaukee, Wisconsin.

A final report shows that over 25,000 persons, an increase of 9,000 over last year, attended the Rotary Ex-

position held two weeks in Chicago and at which the Albemarle Paper Company, J. W. Butler Paper Company, and others allied with the industry exhibited so effectively. The Butler exhibit showing processes in the manufacture of paper and actual demonstrations of the testing of paper was reported as one of the highlights of the Exposition. Incidentally, the increase in attendance is taken as not only a result of a better job of advertising the Exposition but as another prima facie case for actual business betterment.

"Let's Try This," says the cover of the latest Eastern Manufacturing Company mailing on Atlantic Bond. "What is the first requirement for a successful sales letter" starts off the interesting copy. Here are some of the requirements: standardized quality, uniform thickness and finish, freedom from waves and wrinkles and a tub-sized surface that takes clean, sharp impressions. "Quality, Color, Color Range, Tub-sizing, uniformity, flatness on the press, genuine watermark, substance numbers, ease to write on, folding qualities, nationally advertised and the price," these are listed as things to look for. The Eastern folder contains a number of actual specimens of letterheads which bear out the lessons contained in the copy. Chicago distributors are the LaSalle Paper Company and Dwight Bros.

The Swigart Paper Company recently issued its February list Number 10, of a close out on all perfect papers. The list contains necessary information on coated book papers, parchments, box covers, text papers, cover papers, document manilas, bristols and boards, wedding papers, gummed papers, bonds and writings, announcement papers, catalog envelopes, blottings, mimeographs and others.

## Boston Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., February 11, 1935—The Von Olker-Snell Paper Company, whose office and warehouse are at 108-110 Pearl street, has sent out to the trade a complete price list of their lines, or Vosco brands. The list, in convenient and attractive spiral binding, contains 64 pages. It includes, besides prices, sizes, colors and full details, as well as schedules of standard sizes and standard weights in the various classifications of paper and board, together with comparative weights of various sizes in the same thickness, and other tables of information which will be of great help to the trade in estimating and placing orders. The prices became effective February 1.

The D. F. Munroe Company is supplying the toilet tissue for the Flying Yankee, the new steel, streamlined train of the Boston and Maine, running between Boston, Portland and Bangor.

Leon M. Poore, the sales manager for John Carter & Co., Inc., is making a quick trip to Florida, accompanied by Mrs. Poore, from which he will return in time to attend the convention of the National Paper Trade Association in New York.

F. Bendel Tracy, president of the Fort Hill Paper Company, who is at Miami, Fla., will be in Boston two days at the end of this week and from here will go to the National Convention. He will return to Florida afterwards.

A luncheon meeting of the Wrapping Paper Division of the New England Paper Merchants Association was held at the Boston Chamber of Commerce Thursday evening, with Robert M. Stone presiding.

A sales meeting of Storrs & Bement Company was held at the office of the company Saturday afternoon.

A. L. McWhirter, of the Munising Paper Company, Munising, Mich., called on the trade last week.

## Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 13, 1935—The Government Printing Office received identical bids of 13.09 cents per pound for 2,715 pounds of gray laid cover paper as follows: R. P. Andrews Paper Company, Reading Paper Mills, Inc., and Walker Goulard Plehn Company, Inc.

Identical bids of 5.25 cents per pound were also received for 36,000 pounds of antique book paper: Cauthorne Paper Company, Whitaker Paper Company, Perkins-Goodwin Company, R. P. Andrews Paper Company, Aetna Paper Company, Barton, Duer & Koch Paper Company, Dobler & Mudge, J. W. Butler Paper Company and J. F. Post.

Identical bids of $69.00 per ton were also received for 36,000 pounds of binders board from the following: George W. Miller & Company, J. W. Butler Paper Company, R. P. Andrews Paper Company, Mathers-Lamm Paper Company, Whitaker Paper Company, and Dobler & Mudge.

In the January 31 issue it was announced that awards for 97,000 pounds of single ply 50 per cent rag white index paper had been made by the Government Printing Office to the Whitaker Paper Company, W. L. Jones, Inc., and Mathers-Lamm Paper Company at 11.0755 cents per pound. The contract price should have been 13.03 cents per pound. The 11.0755 cent rate was what the previous lot was purchased for.

## Finch, Pruyn Employes Hear Safety Address

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., February 11, 1935—Several hundred employes of Finch, Pruyn & Co. attended a meeting here this week at which the principal address was delivered by W. J. Brennan, safety engineer of the Labor and Industry Department of Maine, who is regarded as an accident prevention authority. Education, enforcement, engineering and enthusiasm were stressed as the four weapons to obtain safety by Mr. Brennan and he also urged cooperation with the safety engineer. His address inaugurated the launching of a more vigorous accident prevention campaign at the local mills and he appealed to all employes to use caution in safeguarding their lives.

B. J. Lapham, vice president of the company, presided and predicted that the mills of Finch, Pruyn & Co. would run full time during the coming year. Letters of regret at being unable to attend were received from Matthew J. Burns and John P. Burke, officials of the International Brotherhood of Papermakers.

## To Act on Closing Champlain Canal

COHOES, N. Y., February 11, 1935—Paper manufacturers in the southern section are preparing to take action relative to provision to be made for water power for their plants in the event of the abandonment of the Champlain Canal. Elimination of the waterway is provided in a measure recently introduced in the Legislature. It is contended that the paper mills will be crippled unless a substitute supply replaces the canal inasmuch as a great deal of water power comes from that source. Several hundred men are employed by the Mohawk Paper Mills and the Gledhill Paper Mills and it is claimed that both concerns would be affected. It has been suggested that a flume be installed in the bed of the canal which would furnish a sufficient flow from the river for the use of the paper mills. Civic authorities are to be asked to cooperate in the matter if the canal is abandoned.

# Concerning the Consumption of Paper

By A. George Lutz[1]

[FROM OUR REGULAR CORRESPONDENT]

"But you cannot regulate the consumer." We can legislate an NRA, standardize the business all we want, set up various codes and trade practices, and regiment the consumer—but you cannot make him buy.

All industry is evolving into a new outlook. Up to recent years, industry seemed only concerned with making two blades grow where only one grew before. The attitude was universal—in agriculture as well as in manufacturing. The race was to the swift. Fast machines were augmented with faster machines. Big capacities were further increased. The theory of success was to reduce cost, per unit, through big tonnage, to that elusive irreducible minimum, in order to appropriate as much of the existing business as possible. The result—the creation of gigantic over-production, which crushed one industry, in its wake after another.

### Codes of Fair Competition

The awakening from the collapse brought about the present codes of fair competition. No longer can one manufacturing plant, or any hungry competitor, ruthlessly tear down or upset the equilibrium of any industry. Due to code operation and code influence, industry has stopped its own destruction. It has conserved whatever equities remain. It has created an air cushion under its structure and has established an armistice in the war of price. No matter how critical one may be of code function, one must admit of a big accomplishment—that of co-operative endeavor to place the industry on the highest plane of competition. It has been said that the greatest achievement of the last century was not the evolution of the telephone nor the telegraph, but the willingness of industry to meet and develop methods of co-operation.

With the present operation of codes and other association activities, the time is ripe to attack the problem of over-production. With consumption running from 40 per cent to 75 per cent of normal capacity, an important problem confronts the industry. How take up the slack of over-production? How absorb the excess tonnage? How operate at full time and give proper employment to the organization?

Economists have been looking at over-production as being merely-under-consumption. Perhaps this is true of our industry. Can we feel that the point of saturation in the consumption of paper has been reached? Paper has been termed as an index of civilization. Is the American citizen consuming his necessary share of the paper production of the country?

### Average Consumption 180 Pounds in 1929

The consumption of paper reached a height of 180 pounds per person in this country for the year 1929. This is an average per person of only one-half pound of paper per day. This average has fallen during 1933 to one-third per pound of paper consumption only a cent or two per day for his share of the paper and paper products of our nation. What an insignificant figure! The public is not buying sufficient amounts of newsprint, of books nor magazines. It does not absorb sufficient amounts of the vast number of paper products, created for the service and welfare of the great American consumer. What a loss to the country!

The time is now coming for co-operative sales-promotion on the part of the industry itself. The time is opportune for increasing the demand and consumption of paper and for its diversified products. Such co-operative sales program was impossible in the days of machine expansion. The depression may have had a silver lining. At this time the trade is industry-minded. It has an open mind for any program of concerted action to step-up the industry. Other industries are building up increasing demands from the public for its products, many of which do not contribute to the higher standard of living sought for by the consuming public.

The matter of increasing the consumption of paper, is a problem too big to be undertaken by individual efforts. It is one for the industry as a whole. Co-operative efforts are essential.

### Industry Should Recognize Social Responsibility

In a general way, every industry should recognize its social responsibilities, to the consuming public. Every industry can co-operate towards creating a higher economic level, in order to release a flood of buying power on the part of the average person in this country, especially from the lower level, which make up the great masses of consumers. These classes of consumers cannot afford and do not buy the products of our paper mills. They do not read a sufficient number of daily or Sunday newspapers. They cannot afford the purchase of good books or magazines. In the Autocrat of the Breakfast Table, Oliver Wendell Holmes says everyone should bring up his family in an atmosphere of books in the home—in order to develop and inspire a cultural life, on the part of the younger set. Surely the consumption of reading matter might be multiplied—were the opportunity and desire created among the people.

We all know the "marginal consumer", the millions who come into the market only when they have the means with which to buy. It is this strata of consumption which must be tapped and taken off the "marginal" fence, into the buying area. To this end, the industry might co-operate with all governmental agencies in a big way towards building up and releasing large amounts of purchasing power. The new programs of social security offer excellent opportunities for the extention of the purchase of paper products by classes of consumers not reached at the present time. Legislation providing for insurance against unemployment, pensions for the aged, and the disabled, incidentally insures the continuance of the consumption of paper by the classes benefited.

### How Consumption Is Curtailed

On the other hand, certain current trends of economic life tend to curtail consumption. Inflation of currency, tends to increase prices to too high a level—perhaps beyond the reach of the public. High prices reduce consumption. Increasing doses of inflation may cut the use of paper. Devaluation of the dollar, elimination of the gold standard and other inflationary tactics increase the cost of doing business, increases the cost of living, and increases the expenses of government. This in turn increases taxes, which in turn breeds more inflation. Wages do not keep abreast with the increased cost of living and the result is the cutting down of the buying power. The industry might be on its guard to combat fallacious and harmful legislation.

The government is assisting various industries towards recovery. It is helping the farmer, the banker, the home-

[1] Great Atlantic Paper Co.

owner and offers to do constructive work to create demand. Perhaps it can help the paper industry. In England there is a demand for the "Penny Post". Perhaps penny postage, will stimulate a wide increase in paper consumption. Imagine the jump in mail-order advertising, all printed on paper! The Department of Agriculture might be enlisted to educate the farmer towards the wider use of paper in his home and on his farm. Governmental agencies can no doubt be of great help in increasing the daily use of paper among the public.

**Cooperation with Other Industries**

Co-operation with other industries might be encouraged and fostered. The printing industry is preparing a campaign to increase the use of printing in this country. The paper industry might officially co-operate. Similar work with the advertising professions might profitably be encouraged. A boom in advertising and a cut in advertising rates would broaden paper consumption. It might enable the publishers to reduce the rates of their newspapers and publications—bringing a jump in circulation and fuller production for the paper mills.

Co-operative sales-promotion for certain grades of paper might be beneficial. We have before us a booklet published by the British Association of Coated Paper Manufacturers. It is called "Your illustrations look better on coated paper." And the booklet is convincing, and no doubt creates many an order for their product.

**Educating the Housewife**

A few isolated manufacturers of paper products are educating the housewives to use their products. Women spend, it is said, 80 per cent of the family income. Women have not begun to use paper to the extent they might, although beauticians, cigarettes and cosmetics are taking their share. How easily paper will reduce the daily drudgery of millions of women in the home! Educational campaigns through concerted efforts will multiply the consumption of tissues, treated papers, wrappings, paper plates and other items too numerable to mention.

What would Henry Ford do in the industry? High speed production, low cost, and high pressure distribution to reach the lower levels heretofore untouched as far as consumption is concerned.

The past history of the industry has been a tribute to the engineering genius of the country—the creation of the highest type of paper machines. The present is the creation of better levels of co-operation and competition. The future—will it be from the viewpoint of the consumer, endeavoring to multiply his daily consumption of the products of our highly efficient paper mills?

## Proposed Paper Bag Code Amendment To Make Assessments Mandatory

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 13, 1935—The Code Authority for the paper bag industry has submitted for NRA approval a proposed code amendment which would make mandatory upon industry members the payment of assessments to cover their share of code administration expense.

The amendment would also empower the Code Authority to prepare a budget and basis of contribution and, after approval, to make expenditures called for under the budget.

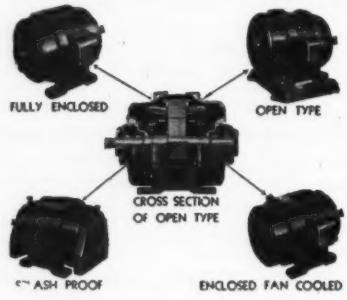
Objections or suggestions concerning the proposed amendment may be submitted to Deputy Administrator W. J. Brown, before February 12.

## New Motors by Harnischfeger

An entirely new line of convertible squirrel cage and slip ring induction motors, offering all standard frequencies for service ranging from 110 to 220 volts, has just been announced by the Harnischfeger Corporation, West National Avenue, Milwaukee, Wisconsin.

Built in accordance with the standards adopted by the National Electrical Manufacturers Association, the outstanding feature of these new P. & H. motors is their ready convertibility from open type to fan cooled, splash proof or totally enclosed construction. This is accomplished through the design of the frame, end heads and bearings to permit interchangeability in the four above mentioned types of single or multi-speed squirrel cage and slip ring motors.

This development in standard AC motors is especially significant to machinery manufacturers because of the




adaptability of these units to various service requirements.

Among the other interesting features is the unique mounting of the stator laminations which are stacked between heavy steel end rings and the entire assembly then welded to the frame. This construction provides absolute rigidity and makes it impossible for the stator core to shake loose.

The rotor windings are assembled from round or rectangular hard drawn copper bars which are placed in the rotor slots without insulation or slot wedges. The ends of the bars are brazed to the end rings by an electric arc torch.

A new bulletin has just been published which gives the details of construction and operation of these new convertible P. & H. motors ranging from ½ h.p., 600 r.p.m. to 125 h.p., 3600 r.p.m. Copies of the bulletin may be had upon application to the company's agents and representatives or to the factory direct. Ask for Bulletin HM-1.

## TAPPI Paper Testing Methods Revised

Tentative revisions of the TAPPI standard paper testing methods for sampling, conditioning, and basis weight were published in PAPER TRADE JOURNAL, November 22, 1934. It is believed that changes proposed in the method for sampling will provide a more representative sample of a paper delivery. In the method for conditioning, the permissible temperature variation has been reduced to plus or minus 3 deg. C, and for precision testing provision has been made for drying the sample before conditioning it, to avoid hysteresis in the equilibrium moisture content. Information to facilitate calculation of basis weights from one trade size to another has been added to the method for determining basis weight. Criticisms of the proposed revisions will be welcomed by B. W. Scribner, chairman of the Paper Testing Committee of the Technical Association of the Pulp and Paper Industry, National Bureau of Standards, Washington, D. C.

# PAPER MEN OPPOSE RECIPROCITY WITH FINLAND

(Continued from page 11)

Despite the adverse effect on Finland's dealings with the United States of our departure from the gold standard, statistics for the first eleven months of 1934 show volume and dollar value of paper and pulp exports to the United States almost equal to the entire business in 1933.

There is no reason for any agreement making any changes in existing conditions in the pulp and paper fields, unless such changes are in the direction of increases in duties on Finnish products. Any changes should be to restrict the present damaging competition, certainly not to broaden this market to the Finnish producers. Yet the American Paper and Pulp Industry does not ask further restrictions, but merely asks that present conditions remain unaltered.

The various divisions of the American Paper and Pulp Industry are filing herewith separate statements as to the relationship of such divisions to the Finnish production of competitive merchandise. At this point, however, we can not omit mention of one unusual condition which is making competition particularly difficult in some fields.

Under existing law duty on foreign commodities is taken on the foreign home market value, or the export value, whichever is higher. By naming an exclusive agent in the United States, however, some sections of the Finnish industry avoid payment of duty on the actual sale price. Exceedingly small sales are made in the home market, which fixes a dutiable value, on which the United States collects duty. The merchandise is sold to the United States buyers at prices ranging from 50 to 75 per cent above the Finnish home market price, so the Finnish sellers making this profit on the merchandise, also add the additional profit involved in the difference between payment of duty on the fixed Finnish market price and the amount which would be collected in duty at the actual price for which this merchandise is sold here. This is entirely in accordance with existing law, but is given as one more instance of the highly profitable market which the United States already offers Finland.

The American Paper and Pulp Industry can not comprehend any reason for any suggestions involving further sacrifices for the advantage of a foreign nation which is already expending the surplus of funds received from this country in purchases from nations other than our own.

### Printing Papers

The American manufacturers of papers covered by the provisions of Paragraph 1401 of the Tariff Act of 1930 are opposed to any change in the present rates of duty on these papers.

These manufacturers are particularly opposed to any foreign trade agreement with Finland containing any guarantee which would prevent the invoking, if necessary, of any of the existing provisions by which this Government can restrict undue or unfair foreign competition. We refer to such provisions of law as the Anti-Dumping Act, Section 3 (e) of the National Industrial Recovery Act, and others of a similar character.

Paragraph 1401 is so comprehensive that it covers the entire field of printing papers, including many special papers, but particularly three chief groups:

1. Ground wood papers, containing a large proportion of ground wood or mechanical pulp.
2. Uncoated book paper, chiefly of soda or sulphite pulp, with only a minor percentage or no mechanical pulp.
3. Text paper, a higher grade of book paper, used for high grade books and other printing purposes.

Under the Code organization of the paper industry, these chief groups of printing paper are in two separate subordinate codes of the general code, administered through the Paper Industry Authority.

The Ground wood paper manufacturers are in the Ground Wood Paper Manufacturers Association; the uncoated book paper and text paper manufacturers in the Book Paper Manufacturers Association.

The present tariff rate is equivalent to an ad valorem duty on the ordinary book papers of approximately 15 per cent. On the ground wood papers the rate is equivalent to from 15 to 20 per cent, while on the higher grades the duty is materially less than 15 per cent. The duty rates on these papers are among the lowest duty rates imposed in any part of the paper schedule of the existing Tariff Act.

In the case of Finland, the domestic industry is chiefly concerned with the ground wood and book grades, as these are the type chiefly produced in that country.

The relationship of printing papers to the tariff involves conditions that can not be considered from a quantitative relationship of tonnage produced here and imported. In no part of the paper industry is the balance between foreign and domestic production so delicate.

A very slight change of the present protective rates would serve to transfer the market for this paper from United States to Canadian mills. Our concern as to the proposed trade agreement with Finland is less because of a fear of a flood of imports from Europe, than the result on the North American situation. Any reduction in the duty, however, would apply to Norway which is now shipping book paper for delivery in this country at less than American cost of production.

The situation at present is almost a direct parallel to that which existed when newsprint was placed on the free list. The industry moved immediately to Canada. No such shift of markets has ever been known in any major American commodity. The danger of the same result in the book paper field is no figment of imagination.

In 1910, the United States imported 25,000 tons of newsprint from Canada, none from Newfoundland, and none from Europe; during that year mills in the United States made 1,200,000 tons or 98 per cent of all that was consumed in this country. In 1934 the United States produced less than in 1910 and supplied only 30 per cent of the United States requirements. That is what the removal of the tariff did in the case of newsprint. If the same course is followed in the case of book and other papers, the absence of protection will cause the producers of these grades to follow newsprint to Canada. We do not yet concede that it is a proper American policy to send American dollars to Canada to build up industries operated with Canadian labor, in the production of merchandise to be sold in the United States.

Today, in Canada, we find a surplus capacity in the newsprint mills equal to at least half of the entire normal production of book paper in the United States. The highest price at which Canadian newsprint mills are now selling newsprint to the United States is about $3 per ton less than the cost of production of newsprint in this country. It would be only a matter of a short time to divert many of these machines from the production of newsprint to the manufacture of book paper comparable to the standard grades made in this country. Many of these mills are already selling dutiable ground wood printing paper in the United States at such low prices that the Code Authority established under the National Recovery Administration has authorized the domestic producers of

these grades to sell their paper at 80 per cent of the cost. In other grades of paper, the present Code provisions specify in broad terms that no sales may be made at less than cost. The situation in the ground wood paper field because of foreign competition is such that special dispensation was granted for all of 1934 to the manufacturers to sell at 80 per cent of cost pending the finding of a remedy for this condition.

In view of the history of the newsprint industry, the reason for apprehension of a similar development in the printing paper field is apparent. If the proposed agreement with Finland were to provide for a reduction in the rate of duty on printing paper, that rate would be applied automatically under the provisions of the Reciprocal Trade Agreement Act on imports from Canada. With such a lowered duty rate applied to Canadian shipments, Canada's idle capacity of 750,000 tons per year could easily, with even this slight encouragement, be used for the invasion of the American market.

Attention should be called also to the fact that even under present conditions, Finland is shipping book paper to this country at prices which are so far below domestic prices for similar grades that the domestic book paper industry has filed with the Customs Bureau a complaint of dumping. With such competition existing even now, the domestic producers can see no justification for a reduction in the present rates.

Printing papers imported into this country during 1934 were entered at an average Finnish value of about 1½ cents per pound, or $30 per ton. The American prices for the comparable papers range from $45 for the low grades of printing paper such as Novel News to about $100 per ton for the higher grades actually being imported.

The book paper industry is one of the most important single groups in the entire American paper industry in tonnage of product and in value of output. Any disturbance of its efforts to continue operation under existing conditions will have an immediate adverse effect on the entire American paper industry. The production of book paper in this country, even in the distressed times of 1934 was nearly 1,000,000 tons of uncoated book paper. Employment in these mills is in the neighborhood of 21,000 persons in productive labor, not including office, executive, sales and other personnel. The average production in these mills, therefore, is about four tons per month per employe. The wages paid these employees totals approximately $1,500,000 per month, even with the industry operating far below normal, and at nearer 50 per cent than 75 per cent of capacity.

The book paper mills purchase large quantities of materials from other industries whose material prices represent chiefly labor. Coal, sulphur, and lime are only part of the materials needed in the production of this grade of paper. It is safe to assume that for every three workers employed in the book paper mills, employment is given two persons in other industries.

The foregoing statement shows that each employee in the book paper industry produces fifty tons of paper per year. If duties are lowered so that foreign paper supplants the domestic product to a greater extent than is now the case, every fifty tons of paper imported will send one American employee to the ranks of the unemployed, and one average family of five will be impoverished in the paper industry alone. For every 150 tons of paper imported and diverted from American to foreign mills, three workmen in an American paper mill, and two in other industries will be deprived of employment, leaving twenty-five additional persons to be fed from relief funds.

In this consideration of the money expended by the paper industry for its raw materials the importance of pulp wood must not be overlooked. Tens of thousands of small farmers in all paper making sections of the country find the paper industry their source of winter work, and the market for a crop for which payment is made immediately in cash. Pulp wood is the money crop for these farmers, even though their annual cut of pulp wood may be only twenty-five or fifty cords. This is no more true in the northern woods than it is in the South. Through their sales of pulp wood to the paper mills these farmers not only realize a return on the acreage they have in uncleared land, but they have also a return for winter labor at a time when their farms provide no other produce which they can sell. The paper companies have great tracts of timber land which they use as a pulp wood reserve, but the purchases from farmers total a greater number of cords than are cut from their own lands.

Government statistics do not segregate importations of book paper from ground wood printing paper, as both grades are classified as printing paper under the existing tariff act. The growth of shipments from Finland of these dutiable papers, however, is shown by the available statistics, as follows:

| | 1931 | 1932 | 1933 | 1934 (11 Months) |
|---|---|---|---|---|
| Pounds | 750,351 | 899,968 | 1,125,007 | 1,936,731 |
| Finnish Value | $19,310 | $19,757 | $22,120 | $29,348 |

In 1931 the average value of these papers was 2.6 cents per pound, and in 1934, with an increase in the proportion of higher grade papers, the average value has fallen to 1½ cents per pound. And this is in the face of the fact that the American abandonment of the gold standard was a definite disadvantage to the Finnish shippers for 1934 operations as compared with those when we were on a gold basis.

The ground wood paper industry, making a wide variety of cheaper grades closely resembling newsprint, involves many millions of dollars of value of product and wages paid, in addition to the data given for the book paper industry. The situation is somewhat different, however, and in some respects more serious, for there is extensive competition already existing in the grades represented by this group. It is this group which has been forced to set a price basis of only 80 per cent of cost as its sale price, and this condition cannot continue indefinitely. Any reduction of duties on papers of this grade would destroy this branch of the paper industry. With the present rate of duty less than 20 per cent, the lowest rate provided for any paper in the entire paper schedule, it is apparent that this group can not survive if its foreign competitors are given advantages even greater than those they now enjoy.

### Wood Pulp

Imported wood pulp is such an important factor in the production of paper in this country that consideration of the imports of such pulp from Finland must be considered in the negotiation of the proposed reciprocal trade agreement.

The pulp industry of the United States asks that no provision be inserted in the proposed trade agreement, either the granting of any further protection to the domestic producers than is provided in this country's present laws, or any modification of those existing provisions of law. The domestic industry takes this position with full recognition of the fact that Finland's cost of production of pulp is probably the lowest in the world, that its shipments to this country are apparently increasing, and that there is reported increase in the Finnish producing capacity.

Inasmuch as pulp is now on the free list, the negotiation of an agreement with Finland can not transfer, under

the terms of the law, this commodity from the free to the dutiable list. Also, international relations between the foreign pulp producers and the American producers of both pulp and paper are on a friendly basis which we all hope will not be disturbed.

Because of this present situation, we do not even consider asking at this time for any imposition of a quota on foreign shipments of this commodity to this country, and we ask no other limitations on imports of this material. On the contrary, we are anxious that the present status be maintained, and that nothing be written into this treaty which would impair the maintenance of the present situation.

While American relations with foreign nations as to pulp exports are now uniformly on an excellent commercial footing, and while the leaders of the pulp industry in most foreign countries are equally desirous with ourselves to continue the present situation, there is always the possibility of efforts to disturb the delicate balance which now exists by producers who are less far-seeing.

For this reason, we believe it would be of mutual advantage to both Finland and the United States to write no language into the proposed treaty which would prevent the exercise by the President of authority now given under existing law to prevent and change in present conditions. As a means to this end, we believe that the proposed treaty should make no mention of pulp, and this would automatically leave the President free to act, if developments required, by application of the Anti-Dumping Act the provisions as to foreign competition in the National Industrial Recovery Act, or to utilize any of the recognized provisions in existing statutes to prevent unfair foreign competition. No need for any such action is now apparent. Should the need arise from any cause, the United States should not be deprived of the opportunity to take such action by any pledges made at this time.

### Carbonizing Tissue

The manufacturers of Carbonizing Tissue oppose any reduction in the present rate of duty on this merchandise, now provided for in Paragraph 1404 of the Tariff Act of 1930. The rate of duty is 6 cents per pound and 20 percentum ad valorem on paper not over six pounds in weight, and 5 cents per pound and 15 percentum ad valorem on paper over 6 pounds and less than 10 pounds in weight per ream. On the contrary, the competition from Finland has become so severe that there should be an adjustment upward in rates on this paper to equalize the present competition.

Competition in the field of carbonizing tissue has become acute in the last year, despite the change in exchange which made shipments from Finland less advantageous than formerly. A striking story is told of this competition by import statistics, as follows:

| | Under 6 Pound Weight | | Over 6 Pound Weight | |
|---|---|---|---|---|
| | Pounds | Value | Pounds | Value |
| 1931 | 7,791 | $5,031 | 54,827 | $19,908 |
| 1932 | 6,320 | 2,783 | 37,451 | 11,400 |
| 1933 | 20,499 | 7,461 | 55,174 | 16,179 |
| 1934 (11 Mos.) | 63,150 | 28,140 | 22,103 | 8,148 |

The price per pound of the light weight paper dropped from 64 cents per pound in 1931 to 40 cents in 1932 and 44 cents in 1934 and the volume of business increased 700 per cent. In 1934 the imports were more than three times the tonnage imported in 1933. Meanwhile the prices of the heavy weight tissue have fallen, and the volume has materially decreased.

We respectfully suggest that our Government should investigate the reports that the Finnish Government owns or so controls the foreign mill making this product that it sells at a high price in Finland, but permits export sales at any loss necessary to secure a volume of tonnage. The net outcome of the operations of this company are such that it is reported to be earning a handsome profit.

It is a fact that the Finnish paper is sold in the United States at prices far below the domestic cost of production, and the domestic producers are steadily losing business because of inability to meet the prices for which the comparable foreign product is sold.

American mills can and do make carbonizing tissue in all weights, and of the finest quality. They can not do so, however, and pay an American scale of wages. While Finnish prices for this paper have fallen thirty-five per cent, American costs have gone up, particularly because of the domestic mills' adherence to the provisions of their Code, requiring a greatly increased scale of wages.

### Vegetable Parchment Paper

The American producers of genuine vegetable parchment paper oppose any reduction in the duty on this commodity, which is provided for in Paragraph 1405 of the Tariff Act of 1930 at 3 cents per pound and 15 per cent.

The development in Finland of the production of vegetable parchment paper has been such in recent years that Finland has been able to capture a large part of the export trade to South America formerly enjoyed by Germany and Belgium. The mills in this country can not compete with the European mills in the Latin-American markets.

There is a striking uniformity in European prices for this paper, which, it should be explained, is a sheet so chemically treated that its essential character is changed, making it highly grease resistant, and so largely used for wrapping of oily foods. The price throughout Europe is 9¼ cents per pound, regardless of where it is produced.

Despite the uniformity of the European price, this paper is exported from Finland to the United States at a dutiable value of 8 cents per pound. At the 9¼ cent value, freight and duty bring the European paper to about the prevailing prices of the domestic product.

Any reduction in the duty on vegetable parchment from Finland would automatically apply to shipments from other countries, and the competition is already so severe that any further change would divert purchases to European competitors, and cause a loss of tonnage and consequent reduction of wages paid by American mills.

### Kraft Wrapping Paper

The manufacturers of sulphate wrapping paper, commonly known as kraft, oppose any proposal to lower the present rate of duty on this commodity, which is dutiable at 30 per cent under Paragraph 1409 of the Tariff Act of 1930, as paper not specially provided for.

Further, these manufacturers are particularly opposed to any foreign trade agreement with Finland containing any guarantee which would prevent the invoking, if necessary, of any of the existing provisions of law by which this Government can restrict undue or unfair foreign competition. We refer to such provisions as the Anti-Dumping Act, Section 3 (e) of the National Industrial Recovery Act, and others of a similar character.

The competition of kraft wrapping paper, used for wrapping, for the manufacture of bags and conversion into other commodities is already so serious that the domestic kraft industry has already filed a complaint with the Imports Division of the National Recovery Administration, asking a revision of existing tariff rates upward. Data as to this complaint, giving domestic costs of production, prices, wages paid, etc., is on file with the Recovery Administration, and available to you.

Since this complaint was filed, and since the hearing by your Committee on the proposed Swedish reciprocal trade agreement, Sweden has reduced its price on this paper about 20 per cent to meet the growing competition from Finland.

The manner in which Finnish exports of this paper to the United States is growing is shown by the following statistics of the Department of Commerce:

| | Pounds | Value |
|---|---|---|
| 1931 | ..... | ..... |
| 1932 | 1,441,644 | $29,622 |
| 1933 | 2,948,644 | 80,066 |
| 1934 (11 months) | 3,351,665 | 102,745 |

A brief analysis of these figures is appropriate. In 1933, when Finnish shipments of this paper were being entered at a dutiable value much lower than the actual sale price, action was taken with the Customs officials on behalf of this industry to correct this undervaluation, and the statistics for later years are at a higher unit price because duty was levied on the actual export price. Despite exchange conditions, and this collection of a greater duty, shipments have continued to increase.

Today we have records of offerings of Finnish Kraft wrapping paper delivered duty paid at Atlantic Coast ports at $3.60 per hundred pounds. This, with deduction of duty and freight, reduces to a Finnish basis of $2.50 per hundred pounds. When these figures are compared with the lowest domestic prices of American mills for comparable paper of approximately $4.50 per hundred pounds, the damage already being done to the American industry is evident. American mills can not meet this competition and pay the scale of wages provided in the Code for this Industry. Imports of this low-priced paper from Sweden and Finland is now about 10 per cent of the total American consumption of paper of the grade made in Europe.

Sweden still is the largest shipper of this paper to the United States, and we have gone on record as objecting to any reduction in the duty rate on such paper from Sweden. If a duty reduction were granted Finland, it would apply equally to Sweden, and this Industry's formal petition for greater protection is already a matter of record.

Opposing a decrease in present duty rates, this Industry asks that the present rate be increased 50 per cent, the maximum permissible under the Act by which these trade agreements are being negotiated.

## TAPPI Luncheon Program

The Technical Association of the Pulp and Paper Industry has arranged a luncheon program at the Waldorf-Astoria Hotel, New York, which will be a fitting finale to what is expected to be the biggest attended convention ever held during Paper Week in New York.

Following the luncheon, which will be held in the Grand Ball Room, the TAPPI gold medal will be presented to Edwin Sutermeister of the S. D. Warren Company, for his outstanding contributions to the technical development of the pulp and paper industry. The presentation will be made by Frederic C. Clark of Boston, formerly vice president of the Technical Association.

Ernst Mahler, chairman of the Central Grading Committee of the Paper Industry Authority, will give an up to date resumé of the paper grading activities of the industry. S. L. Willson, president of the American Writing Paper Company Inc., and chairman of the Paper Industry Authority, who is resigning from the latter position, will speak on "The Progress Made in the Paper Industry under the NRA."

F. J. Sensenbrenner, president of the Kimberly-Clark Corporation and a member of the Paper Industry Authority, will discuss "The Future of the Pulp and Paper Industry."

Stuart Copeland of the Eastern Manufacturing Company and chairman of the Executive Authority of the United States Pulp Producers Association, will discuss "The Wood Pulp Situation."

Anyone desiring to attend will be quite welcome, but reservations must be made at the registration desk of the Technical Association of the Pulp and Paper Industry, Grand Ball Room floor, not later than Wednesday noon, February 20. Tickets will be $3.50, but will be included in the registration fee of all who attend the Association meeting.

## Jackson Paper Co. Host

JACKSON, Miss., February 11, 1935—Continuing a custom established more than ten years ago, officers and employes of the Jackson Paper Company were entertained here Friday evening, January 25 at the Robert E. Lee hotel at an annual dinner, as the guests of H. T. Newell, president of the company.

Fun and pleasure was the keynote of the delightful affair, with splendid entertainment being furnished by Mr. and Mrs. Alvon Doty. Short talks were made by Mr. Doty, and James G. Chastain, Jr., superintendent of city schools, and an inspiring message was brought to the group by Pat H. Eager, prominent Jackson attorney. A delicious six-course dinner was served.

Officers and employes of the company and guests who were present included: Mr. Newell, H. O. Smith, vice-president of the organization, and Mrs. Smith; J. M. Wilkinson, secretary-treasurer, and Mrs. Wilkinson; Mr. and Mrs. C. L. Howie, Mr. and Mrs. J. H. Albritton, Mr. and Mrs. J. Fred Wallace, Pat H. Eager, Mr. and Mrs. James G. Chastain, Jr., Miss Ruth Smith, Miss Theo Hotch, Miss Susie Newell, Miss Annie Robertson, Miss Eugenie Sanderson, Miss Anne Newell, F. Shuler Cole, Mrs. J. F. Wilkinson, Mr. and Mrs. J. T. Lowther, Harvey Newell, Jr., Beverly Briscoe, Robert Jackson, Mr. and Mrs. Alvon Doty, and Jimmy Chastain.

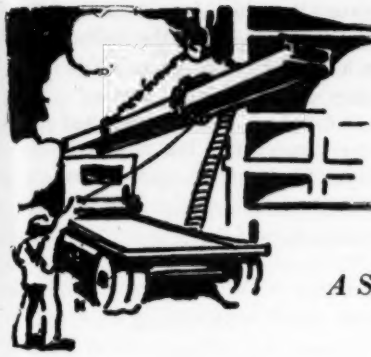
## International Pulp Co. Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

GOUVERNEUR, N. Y., February 11, 1935—Stockholders of the International Pulp Co. held their annual meeting this week at which officers and directors for the year were chosen. Among the directors re-elected were William C. Geer and W. D. Mahoney, of Troy, N. Y.; F. N. Belding, Rockville, Conn.; Michael Doyle, Rochester, N. Y.; S. P. McCrimlisk, C. N. Rambo and W. N. Stillhamer, of New York City; Kendall Castle, of Rochester, and Frank P. McCarthy, of Troy. Officers elected include Michael Doyle as president; William C. Geer, vice president; William S. Stillhamer, treasurer; Stephen J. McCrimlisk, secretary, and John J. Wallace, general manager.

## Paper Mill Supply Dealers Banquet

The Twenty-Seventh Annual Banquet of the New York Association of Dealers in Paper Mill Supplies, Inc., will be held in the East Ball Room of the Hotel Commodore, New York, on Wednesday evening, February 20, at 7 p. m. sharp. Following the banquet a wonderful show has been arranged which will be more elaborate and entertaining than any before.



# CONSTRUCTION NEWS

*A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills*

**Construction News**

**Panama City, Fla.**—The Southern Kraft Corporation, Panama City, has plans under way for extensions and improvements in water supply and facilities at local pulp and paper mill, including installation of a new water-treating plant, pumping station and other equipment. Company has authorized the drilling of a new well, about 1500 feet deep, in connection with program. Entire project will cost over $85,000, with equipment. Company is a subsidiary of the International Paper Company, 220 East 42nd street, New York, N. Y.

**Otsego Mich.**—The Otsego Falls Paper Mills, Inc., lately chartered under Michigan laws with capital of $100,000, as previously announced in these columns, will be closely identified with the Prairie State Paper Mills, Inc., Joliet, Ill., manufacturer of manila paper products, corrugated specialties, etc., with Herman J. Finder head of both organizations. First noted company has extensions and improvements under way at the former Bardeen mills of the Allied Paper Mills, Kalamazoo, Mich., at Otsego, which have been acquired for new plant. It is proposed to have the mill ready for service at early date, when one machine will be operated; a second machine will be started closely following, with plant giving employment to about 100 persons. It is understood that output will be used in part at the Joliet mills. David H. Greene, treasurer of the Prairie State company will be identified with the Otsego plant.

**Dallas, Tex.**—The Equality Paper Box Company, 1609-11 Hughes circle, manufacturer of folding and other paper boxes and containers, is planning early rebuilding of portion of plant, recently destroyed by fire, with loss reported over $60,000, including equipment. Reconstruction is estimated to cost close to like amount.

**Jacksonville, Fla.**—The Atlantic Match Company, care of H. W. Roenitz, 3644 Richmond street, Jacksonville, president, plans installation of paper-converting department in proposed new local plant for manufacture of book matches. Company has taken over local building at King and Rosedale streets, and will improve and equip for new plant. It is reported to cost over $35,000, with machinery.

**Fitchburg, Mass.**—The Cowdrey Products Company, recently organized with capital of $75,000, plans operation of local plant for production of paper and paperboard specialties, including caps for milk bottles and allied products. Charles F. Cowdrey is president, and C. Francis Cowdrey, 463 Blossom street, Fitchburg, treasurer.

**Roaring Springs, Pa.**—The D. M. Bare Paper Company is said to be increasing production at local mill, which is giving employment to large working force. Proposed to hold to higher manufacturing schedule for indefinite period.

**New York, N. Y.**—The United Box Corporation, recently organized with capital of $20,000, plans operation of local plant for production of line paper boxes and containers. Ira F. Weiss, 173 West Seventy-eighth street, New York,. is one of the principal incorporators.

**Cleveland, Ohio**—The Cleveland Wax Paper Company, 13831 Triskett street, manufacturer of waxed and other processed paper products, has approved plans for new one-story addition to plant, 80 x 90 feet. General contract has been awarded to the S. W. Emerson Company, 1836 Euclid avenue, and superstructure will be placed under way at early date. New unit is reported to cost over $25,000, including equipment.

**Wausau, Wis.**—The Minnesota Mining and Manufacturing Company, 791 Forest street, St. Paul, Minn., manufacturer of sandpaper and other abrasive paper stocks and products, has let general contract to William M. Murphy & Son, New York Building, St. Paul, for foundations for new addition to raw material plant at Wausau, recently referred to in these columns. Award for superstructure for new unit, to be one-story, 30 x 300 feet will be placed soon. Project will include general improvements in present mill and new head house, with estimated cost of more than $150,000, with equipment. Toltz, King & Day, Inc., Pioneer Building, St. Paul, is consulting engineer.

**Johnsonburg, Pa.**—The Castanea Paper Company is considering construction of a new experimental plant at local mill, to be used primarily for the treatment of sulphite waste and auxiliary service. It is proposed to begin work early in the spring. It is understood that a list of equipment to be installed will soon be determined. New unit will cost over $35,000, with machinery.

**Vancouver, B. C.**—R. O. Sweezy, 210 St. James street, Montreal, Que., is at head of a project to construct and operate a new pulp and paper mill on site in vicinity of Vancouver, now being selected. New plant will consist of several units, including sulphite pulp division and paper-making mill, with power house, storage and distributing plant and other structures. It is reported to cost over $325,000, including equipment. Work is reported to begin early in the spring.

**Toronto, Ont.**—Plans are reported under way for remodeling and converting of three mills of the Abitibi Power and Paper Company, Ltd., at Espanola, Fort William and Sturgeon Falls, Ont., respectively, for production of sulphide products for use in manufacture of artificial silk. The plants have been idle for a number of months. It is said that financing is being arranged in the United States for the program, which is reported to cost over $300,000, with machinery. Project is scheduled to begin early in the spring. Hon. Peter Heenan, Toronto, Ontario Minister of Lands and Forests, is active in the enterprise.

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## COMING EVENTS

AMERICAN PAPER AND PULP ASSOCIATION, Fifty-Seventh Annual Convention and Meeting, Waldorf-Astoria Hotel, New York, February 18-21.

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Convention, Waldorf-Astoria Hotel, New York, February 18-21. Annual Luncheon, Waldorf-Astoria Hotel, Thursday, February 21.

SALESMEN'S ASSOCIATION OF THE PAPER INDUSTRY, Annual Meeting and Luncheon, Waldorf-Astoria Hotel, New York, Tuesday, February 19.

NEW YORK ASSOCIATION OF DEALERS IN PAPER MILL SUPPLIES, Annual Banquet, Hotel Commodore, Wednesday, February 20.

NATIONAL PAPER TRADE ASSOCIATION OF THE UNITED STATES, Convention, Waldorf-Astoria Hotel, New York, February 18-21.

## MORE THAN HALF OF THE MACHINERY IN INDUSTRY IS OBSOLETE

More than half the machinery and equipment in industry, essential to production of goods of all kinds, is today obsolete in the opinion of Bernard L. Lester, assistant industrial sales manager of Westinghouse Electric and Manufacturing Company. Mr. Lester declared that in the past business had placed the greatest attention to merchandising methods as applied to consumption goods and to package goods, but capital or durable goods have been left to work out their own salvation.

In the distribution of machinery and equipment, Mr. Lester says in his book on "Marketing Industrial Equipment," that the factors of obsolescence and depreciation are of outstanding importance. Machinery for the most part does not wear out but, rather, it remains the same while processes and methods of production advance and cause the machine to become inefficient and expensive to operate, the author points out. He says that national recovery is awaiting a revival in the durable goods industries and that pent-up buying power for machinery and equipment has accumulated for half a decade.

Mr. Lester, who is also lecturer at the University of Pittsburgh, believes that conditions in industry have changed to the point where new selling methods are needed on the part of machine builders. "Since machinery is of value only to the extent to which it will earn money for the users," Mr. Lester points out, "the selling program must be based upon a definite expenditure which will yield to the user a definite and justifiable return."

"Competition in all forms of trade has reached the point where it is no longer constructive but positively destructive," Mr. Lester says. He is of the opinion that progress is economical and that controlled distribution will come through a popular realization of the folly of "price selling" and "price buying."

It was pointed out that A. W. Robertson, chairman of Westinghouse Electric and Manufacturing Company, when a member of the National Rehabilitation Board appointed by former President Hoover, found that about 55 per cent of industrial equipment was over ten years old and inefficient and that about $5,059,000,000 worth of equipment, that would normally have been replaced, had not been purchased. It was found that the average normal outlay for industrial equipment is about $5,000,000,000 a year.

Because industry has failed to replace obsolete equipment and machinery, Mr. Lester sees a vast market open to the durable goods industries. The revival of this market would mean employment of millions of workers, a reduction in the cost of manufacturing and a reduction in prices of consumer goods.

## 1935 CONTINUES 1934 GAIN

Business improvement continuing into January, and perhaps showing a gain, was reported by the Chamber of Commerce of the United States in its weekly review last week.

The statistical record suggests, the review declares, that "barring the intervention of disturbing, artificial and arbitrary influences, there is ahead more improvement in the durable goods fields and renewed advance in the industries that offer products for immediate consumption."

The review estimates that 1934 industrial production was 25 per cent greater than that of the low year of 1932. The increase, it adds, was accompanied by greater employment, manufacturing industries alone employing 1,300,000 more wage-earners in December than in the corresponding month in 1932.

The 25 per cent increase in production, the survey comments, "is a general average for all classes of production."

"If any one should undertake to point out that this general average was but 5 per cent over the rate for 1933, which was a year of abnormal and uneven stimulations," the review proceeds, "he will at once be met by the encouraging circumstance that the most pronounced increases, about 25 per cent, in 1934 were in investment goods, as our foreign friends classify all products which are not for immediate consumption.

"Among the durable goods nothing like uniformity was realized or to be expected. A significant feature was the increasing strength toward the end of the year in the iron and steel industry, with its wide influences. The increase in production of iron and steel has continued with acceleration so far in 1935, giving a good augury for what

is ahead unless untoward developments reverse the present evidences of gathering progress.

"This is obviously a period when untoward events would be very detrimental to the national public interest.

"The manufacturing payrolls for last December were at least $190,000,000 more than for the same month two years before. All of the statistics yet available indicate that, instead of showing a moderate seasonal recession, which is normal, employment in manufacturing was maintained in January at the December level, and perhaps rose higher.

"Among the statistics appears remarkable use of electric power, which in January this year exceeded use in January, 1929. At the end of January coal was moving by railroad in greater volume than at this time of year since 1931. So far as checks drawn on bank deposits supply an index of general business activity, they were 15 per cent over the total for January, 1934."

The review declares that "in a period of recovery unevenness is usually a sign of progress."

## Completes Survey of Parker-Young Co.

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., February 11, 1935—R. Frank McElwain, retired paper manufacturer, has completed a survey of the Parker-Young Company of Boston that is being reorganized.

Mr. McElwain suggested that the Parker-Young Company needs from $200,000 to $300,000 additional capital to carry out certain additions and improvements to the physical equipment of the paper mills at Lincoln, N. H., in order to place itself in a better competitive position. The company's products are largely manila, bond, envelope, and various specialties, with an annual capacity of from 20,000 to 25,000 tons.

Mr. McElwain also has completed a survey of the American Writing Paper Company, Inc.

## Consolidated Paper Co. Earns $2.31

Consolidated Paper Company reports for year ended December 31, 1934, net of $1,819,688 after depreciation and federal taxes, equivalent after 7 per cent. preferred dividends to $2.31 a share on 750,000 shares of common stock. This compares with $814,222, or 93 cents a common share in 1933.

Current assets as of Dec. 31, 1934, including $1,392,094 cash and United States government securities, were $3,343,127 and current liabilities $765,146, against cash and United States government securities of $830,097, current assets of $2,463,094 and current liabilities of $578,657 at end of preceding year.

## To Discontinue Misleading Trade Name

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 13, 1935—Misleading use of the word "Mills" in its trade name will be discontinued by the Gillette Fibre Mills, of 73 Tremont street, Boston, according to a stipulated agreement between the Federal Trade Commission and this respondent. The company, a distributor of hard fiber board, will discontinue using the word "Mills" as a part of its trade name or in any way which would deceive purchasers into believing that it owns, controls or operates a mill or factory wherein the products it sells are manufactured, when this is not the fact.

## What's Going On In Washington

An unusual opportunity will be afforded to get a first-hand account of administration activities and policies at the luncheon of the Salesmen's Association of the Paper Industry, which is to be held in the Hotel Waldorf-Astoria, on Tuesday, February 19.

The principal speaker will be the Hon. John Dickinson, Assistant Secretary of Commerce, whose topic will be "The Problem of Recovery." Mr. Dickinson is not only well qualified to talk with authority as an official member of the administration, but he has a background that will enable him to present a clear outline of the recovery program.

As an economist, he has served on the United States War Trade Board and the Governor's Advisory Commission of the cloak and suit industry of New York. As a lawyer, he has practised with Senator McAdoo, and prior to his appointment as Assistant Secretary of Commerce, he held a professorship at the University of Pennsylvania Law School. As professor and economist, he has lectured at Harvard, Amherst, Princeton, and Radcliffe.

S. L. Willson, president of the American Paper and Pulp Association, and George H. Mead, will offer brief remarks about association activities and the industry in general.

According to the reservations that have been made already, the paper trade will be well represented at the Salesmen's luncheon. Each year the attendance has increased. Last year brought a record attendance, but there is every indication that this record will be shattered this year.

## I. L. Gartland Goes with D. M. Bare Paper Co.

Announcement has just been made by The D. M. Bare Paper Company, Roaring Spring, Pa., of the appointment of Mr. I. L. Gartland as general sales manager, with headquarters in New York City. The appointment will be effective as of March 1, this year.

Mr. Gartland needs no introduction to the paper trade because of his very extensive activities and contacts in various divisions of the paper field both in Eastern and Western territories. Mr. Gartland comes direct from The Northwest Paper Company at Cloquet, Minn., where as general sales manager for the last four years he has been successfully directing the sales, advertising and sales promotion activities of that company. Prior to his affiliation with Northwest, he had been identified with Port Huron Sulphite and Paper Company, the Fletcher Paper Company, the Bayless Manufacturing Company, Saranac Pulp and Paper Company, and the Groveton Paper Company.

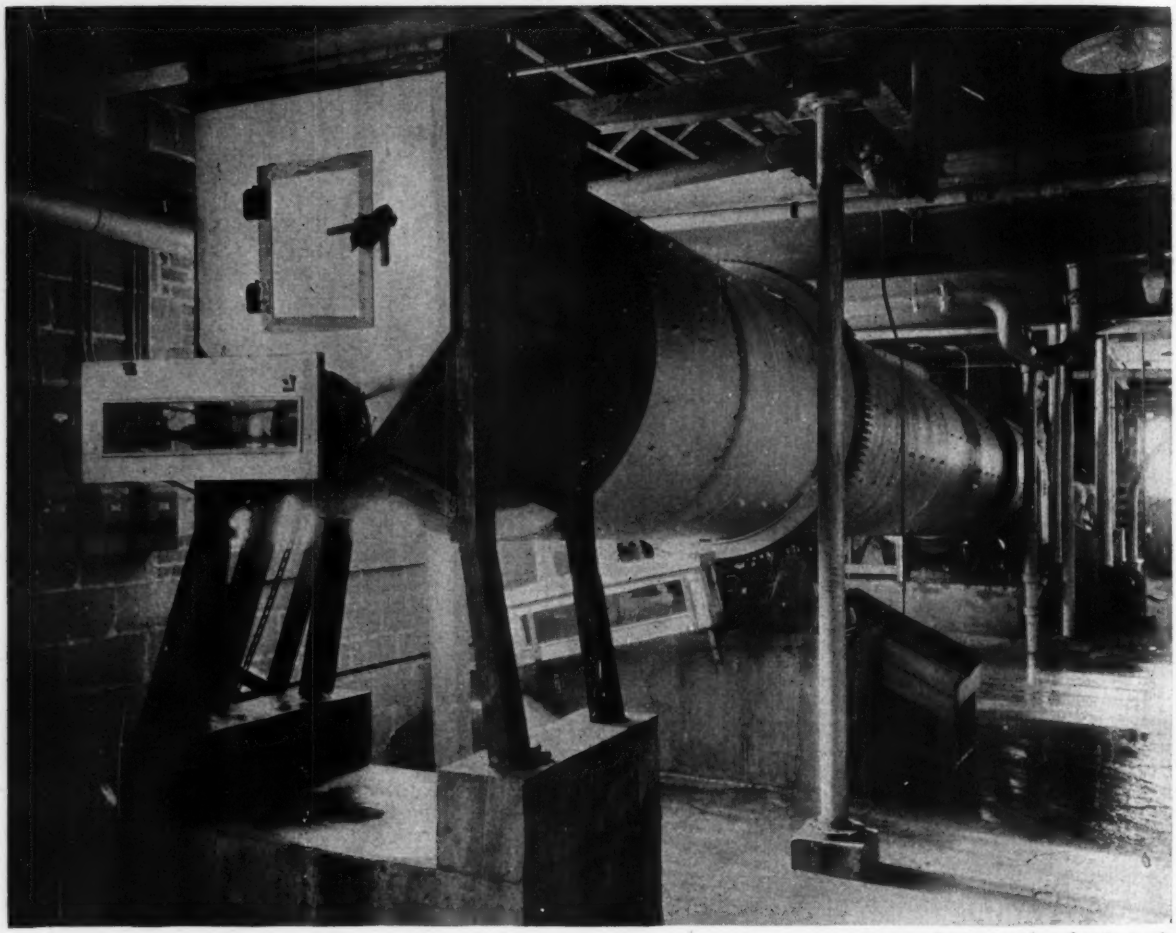
In his new connection Mr. Gartland will have general supervision of all sales activities, and with his wide knowledge of both manufacturing and sales, he brings a wealth of experience to his new association. The entry into the mill brand field last year by the D. M. Bare Paper Company, and Mr. Gartland's affiliation with it at this time makes this a most logical combination and one destined to substantial success.

## Gears & Transmissions Co. Formed

The Gears and Transmissions Company, 3600-08 South Oakley avenue, Chicago, is a new company which has been organized to give prompt and personal service on gear problems and other transmission requirements. The company's line is complete, and new catalogs will be off the press soon, which may be had by interested persons free for the asking.

# NO LONGER AN ART

## NOW A SCIENCE



*Interior view of one of our Casein units*

**CASEIN** making was formerly an art in that the "feel" of the curd was the most important control of quality.

The application of heat and pH control, together with modern equipment, have eliminated guess work and made possible the manufacture of uniformly high quality. Speed in processing is essential in producing high quality Casein . . . with **ACCO Casein** it is a matter of minutes from milk to the Casein bagged ready for shipment.

**American Cyanamid & Chemical Corporation**

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

# A Water Absorbency Tester Using 0.1 cc of Water

By S. W. Reese[1] and M. A. Youtz[2]

In recent years the testing of paper towels and absorbent tissues for water absorbency has been increasingly accomplished by the use of 0.1-cc portions of water rather than 0.5-cc or 1.0-cc as formerly. Properly carried out, the test is more rapid, more accurate, requires smaller samples of paper (of importance chiefly in research work on hand sheets) and is not open to the difficulty of water drops falling through the paper. This occurs with very absorbent or light-weight papers and occasionally with heavier towels and necessitates a somewhat uncertain and time consuming correction.

The chief defect of the test has been the difficulty of readily and accurately delivering 0.1 cc of water onto the paper surface. This has largely prevented the use of the test as a routine control operation. Carson and Worthington (*1*) have designed and described an apparatus which accurately measures and delivers 0.1 cc or other small amounts of water. However, it seemed worth while to attempt to build an apparatus which would not require as much care and perhaps be quicker and easier in operation, especially by inexperienced men, machine tenders, etc. It is believed that the apparatus described below has these advantages. It can be readily adjusted so that it delivers 0.1 cc of water with a maximum variation of about 1 per cent from the average or .001 cc of water. It does not quite avoid the defect, mentioned by Carson, of delivering the drops over varying areas of paper, but for towels this difficulty has been found to be non-existent or of slight consequence when the advantages are considered. The ease and speed of operation are astonishing.

### Description of Apparatus

The apparatus,[3] shown diagrammatically in Fig. 1 consists of a reservoir (A) about 7 feet above the pipette, a connecting tube (B) of rubber or glass, a three-way capillary stopcock (C) of 1.5-mm. bore, a pipette (D) graduated to .01 cc, with tip and top cut off, a two-way capillary stopcock (E) drawn out to a fine tip, suitable supports (F,F) and a desk lamp or other light source. The three way stopcock (C) has the two tubes projecting downward, one, however, being bent away to connect with the reservoir. The other downward tube is ground to a fine tip with emery paper and oil. The upper tube of stopcock (C) is connected to the graduated pipette (D) with rubber tubing or by fusion and the upper end of the latter is closed by the stopcock (E) by rubber connector or by fusion. The upper end of (E) is drawn down in a flame to an extremely fine capillary.

### Operation

After adjustment, the operation consists of: (1) Turning stopcock (C) to connect the graduated pipette with the reservoir; (2) Placing the paper sample about ⅜ or ½

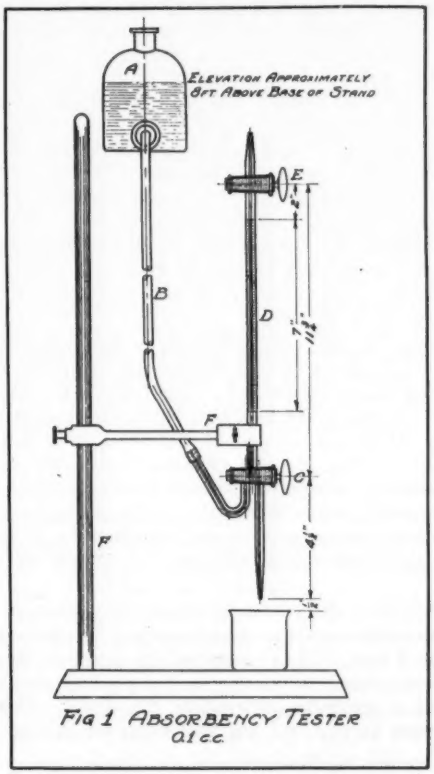



Fig 1 Absorbency Tester 0.1 cc.

[1] Laboratory Assistant, Northern Paper Mills, Green Bay, Wis.
[2] Member TAPPI, Research Director, Northern Paper Mills.

inch below the ground tip, (3) *Quickly* rotating stopcock (C) through 180 degrees and starting a stop watch, (4) judging the endpoint as usual by observing the disappearance of light reflection from the water surface. Since stopcock (E) is kept closed, the operation of filling the pipette compresses the air slightly in the upper part and upon *rapidly* turning stopcock (C) this pressure plus gravity forces the water out with a slight downward and upward surge so that either no water remains outside the tip or only a tiny drop of constant size. Spattering does not occur unless the paper sample is ¾ inch or more below the tip. To refill, it is only necessary to rotate stopcock (C) 180 degrees, upon which the reservoir again charges the pipette and it is ready for another test. If necessary, as many as 20 drops per minute could be delivered.

It is possible to test a number of samples simultaneously with one apparatus and one stop watch. Either a rotating frame is used, carrying the samples successively beneath the tip, or the samples, each on a support (such as a 150-cc beaker), are placed by hand beneath the pipette tip at intervals of 10 to 15 or 20 seconds. The stop watch is started only at the beginning of a series and the times noted as the drops are absorbed. With a little practice, an indefinite number of samples can be tested at intervals of 15 seconds or perhaps even less. The interval should be chosen at about 1/6 or larger fraction of the average absorbency times so that no more than 6 samples need be under observation at once.

The filling and adjusting operation is conducted as follows: Stopcock (E) is closed. Stopcock (C) is rotated to connect the reservoir with the graduated pipette section (D). Stopcock (E) is slowly opened until the water level reaches it and is then closed. Stopcock (C) is turned 180 degrees to connect (D) with the discharge tip. Stopcock (E) is slowly opened and the lower part of the apparatus filled with water to about the mid point of the graduations. If necessary to reach this level or remove air bubbles this operation is repeated, and (E) is closed. Stopcock (C) is again rotated 180 degrees to connect the reservoir with (D). The height of the meniscus in (D) is then read off. Stopcock (C) is *quickly* rotated 180 degrees to connect (D) with the tip and the height of the meniscus again read. If the difference of the readings is less than 0.1 cc the initial water level in (D) is brought a little lower and the testing operations repeated. If the difference of the readings is more than 0.1 cc the initial level in (D) is made a little higher, etc. If desired, when adjustment is about correct, the drops may be caught in a weighing bottle and weighed, the adjustment being changed until exactly 0.1 cc ± .001 cc is delivered.

A change in room temperature or barometer after adjustment will affect the air volume in (D) and hence the amount of water delivered. Also stopcock leakage may affect it. A change of 1 inch in barometer causes a change in water delivered of about .002 cc and a temperature change of 17 deg. F. also changes it by .002 cc. Ordinarily no such changes will occur during one day. However, it is worth while noting the readings on the graduated section every half day or so and readjusting, if necessary. This is also desirable to obviate the effects of stopcock leakage.

The height of the reservoir above the pipette is of some importance although it is unnecessary to be extremely exact about the 7 feet. If the reservoir is too low, there is too little compression of the air in the pipette on filling and too small a surge on delivering the drop. This results in leaving a larger and variable drop on the tip. If the reservoir is too high, the surge is too great and spattering may result. If an air supply at a constant pressure of 3½ pounds is available, the reservoir may be at table level and connected to this air pressure. The ordinary air supply of a laboratory, governed by the usual regulator on air compressor, and subject to the other intermittent demands, is not suitable, as its pressure may vary between 2 and 6 pounds.

[3] Obtainable from the Wilkens-Anderson Co., Chicago, Ill.

**Literature Cited**

(1) Paper Tr. J., 95, No. 16:34-36; T.S. 188-90 (Oct. 20, 1932).

## TAPPI Notes

Advance indications point to one of the largest conventions of the Technical Association of the Pulp and Paper Industry ever held when it meets at the Waldorf-Astoria Hotel, New York, February 18 to 21.

J. C. Barthel, former chemist at the Oswego Falls Corporation, Fulton, N. Y., is now at the Institute of Paper Chemistry, Appleton, Wis.

H. E. Obermanns, formerly a student at the Institute of Paper Chemistry, is now an engineer at the Hammermill Paper Company, Erie, Pa.

S. J. Wineburgh, recently of the New York State College of Forestry, is now a chemist at the Niagara Falls mill of the International Paper Company.

G. C. Munro, recently of the staff of the Institute of Paper Chemistry, is now a member of the research organization of the Champion Coated Paper Company, Hamilton, Ohio.

G. P. Genberg, formerly of Fraser Companies, Ltd., and now connected with Uddeholms, A/B, Sweden, is visiting in the United States.

Ernst J. Schreiner, of the Oxford Paper Company, will present a paper at the TAPPI Annual Meeting on "Possibilities of Improving Pulping Characteristics of Pulpwoods by Controlled Hybridization of Forest Trees."

M. N. Davis of Kimberly-Clark Corporation will read a paper at the TAPPI annual meeting on "A New Formation Tester," and Otto Kress and H. W. Morgan of the Institute of Paper Chemistry will read a paper on "The Oxford Gloss Meter."

## Geo. A. Whiting Paper Co. Insures Employees

The George A. Whiting Paper Company, of Menasha, Wis., has announced the adoption of an employees' group insurance program, which provides life insurance benefits of $1,000 for all general workers. The Metropolitan Life Insurance Company is underwriting the plan on a cooperative basis, employer and employees sharing the cost.

As part of the group plan, insured workers will be entitled to visiting nurse service during sickness or injury. In addition, pamphlets advising on the conservation of health and prevention of disease will be distributed periodically.

## New England TAPPI to Meet

The New England section of the Technical Association of the Pulp and Paper Industry will meet at the Hotel Nonotuck, Holyoke, Mass., Friday evening, February 15, at 6:00 o'clock.

The speaker will be Randall H. Doughty of the Fitchburg Paper Company, who will talk on "Use Analysis as a Basis for Paper Manufacturing."

Those who can not attend the dinner will be welcome at the meeting at 8:00 p.m.

# The Structure of Fiber and Its Influence In The Making of Paper*

By W. Boyd Campbell[1]

The question of the real meaning of the term "hydration" as used by papermakers is one which still awaits a generally acceptable answer. It is important that a proper answer be found for on it is built the whole paper industry. Put in another way the question is "Why do fibers stick to one another to make paper?" The decision is not to be reached by majority opinion but must be found through the accumulation and logical analysis of much exact data won by careful experiment.

Reducing things to simple terms, there are only two ways in which objects, be they fibers or anything else, may become attached to one another. The first is by some kind of mechanical interlocking, illustrated by the links of a chain, by a knot joining two rope ends or even by the arrangement of the fibers in the rope. The second is by some species of adhesion, illustrated by the postage stamp, or by the adhesion of sugar crystals in a piece of lump sugar or by the sugar molecules in a single crystal.

The interlocking mechanism is obvious but that of adhesion is less so. At bottom it is doubtless a matter of the attraction of unlike electric charges. Some pattern of the positive and negative charges which make up the molecules in one piece of matter make a fit with those of another piece of matter so that when close enough a mutual attraction results. Under favorable conditions, as in slow crystallization, the molecules can arrange themselves to make a perfect fit and a perfect crystal results. Under other conditions, as where many crystals are already formed, the last ones to be deposited can not make such perfect fit and so must form in arrangements of less strength and greater solubility. A gel such as glue is, according to modern views, very similar to the mass of sugar crystals in the piece of lump sugar but with the difference that the individual crystals are very much finer and of an exaggerated rod-like form. This difference leads to a more open structure which is usually filled with liquid. The structure may be rigid enough to withstand the stresses set up on evaporation of the liquid so that when dried a porous gel results as in the case of silica gel; or it may have little rigidity and collapse under such stresses so that the dry gel is almost non-porous as in gelatin gels.

### Chemical Conception of Hydration

A few years ago, before the chemical and physical structure of cellulose was as well known as it is today, the chemical conception of hydration seemed best to fit the facts. Schwalbe considered that beating brought about some additional intimacy of contact between cellulose and water to form a partially hydrolysed cellulose which was strongly absorbed on the unchanged portion. Just how the mechanical treatment could bring about hydrolysis was not clear but neither was the catalytic effect of acids which certainly did cause hydrolysis. The supporting evidence for this view was that stuff was more easily beaten to "mucilage" if not too nearly pure alpha cellulose; that beating usually caused an increase in copper number; that paper made from highly beaten stock was more hydroscopic. The hydroscopic test, however, has been found to be in error; the copper number does not necessarily increase on beating and is of doubtful value as a purely chemical test in any case; while the ease of beating slightly degraded cellulose may be only due to a greater ease of causing fibrillation. Curran, Simmonds and Chang, at the Forest Products Laboratory, Madison, made a thorough search for change of chemical properties by beating. They found no change except that the beaten stock was somewhat more quickly hydrolysed by acid, a difference which may readily be ascribed to physical alteration.

### The Imbibition Conception

In 1925 James Strachan read a paper before the Technical Section of the Papermakers' Association of Great Britain and Ireland in which he asserted that hydration was synonymous with imbibition of water by the fiber. He argued that, since the curve of water vapor pressure against moisture content for beaten stuff was continuous and not stepwise as for hydrated salts, there could be no formation of hydrates. But he seemed compelled to account for some kind of hydration and so had recourse to a meaning attached to the word in colloidal chemistry. When gel such as gelatin or cellulose absorb water and swell the process is sometimes called "imbibition" and the gel material is said to be hydrated. Strachan asserted that the hydration produced in the beater was of this nature. He claimed that the main function of beating was to accelerate such imbibition through extension of external surface by fibrillation. He gave no experimental data on this main point but by experiments with masses of vulcanized fiber sought to show by analogy how beating processes might have such effect. While his experiments might be criticized in detail and given quite other interpretation to that he gives, the main objection to them is that the rate of imbibition of a mass of vulcanized fiber is not necessarily indicative of the rate of imbibition of single fibers. Moreover, there is nothing in the experiments to indicate an identity between imbibition and papermaker's hydration. The contrary has been proved by several workers. Thus L. G. Cottrall soaked pulp under heavy hydraulic pressure for 48 hours and found practically no increase in strength yet imbibition should have reached its maximum.

### The Fibrillation and Crystalline Bond Hypothesis

In 1930 some work was carried on at the Forest Products Laboratories, Montreal, in an attempt to measure the amount of hydration brought about by beating. The method was to determine the curve of vapor pressure against moisture content for the same pulp before and after beating. Defining hydration very broadly as the binding of water to the cellulose, any change in hydration effected by beating should become evident when the two curves are compared. If both samples contain, say, ten per cent of water and some greater part of this water is bound to the cellulose in the beaten stock than in the un-

* Presented at the meeting of the Deleware Valley Section of the Technical Association of the Pulp and Paper Industry, Philadelphia, Pa., Jan. 18, 1935, also at the annual meeting of the Technical Section of the Canadian Pulp and Paper Association, Montreal, P. Q., Jan. 25, 1935.

[1] Member TAPPI, Research Chemist, Forest Products Laboratories of Canada, Montreal, P. Q.

beaten then the vapor pressure over the beaten stock should be lower than the other. This would be so even if the term hydration were used in Strachan's sense of "imbibition." However, the results of this work showed that the curves were identical within the experimental error. Therefore it was concluded that, whether or no cellulose was hydrated when wet with water, beating made no change in the degree of any such hydration. It was accordingly necessary to ascribe the change brought about by beating to something other than a change of hydration. The hypothesis was then put forward that the action of the beater was the purely mechanical one of producing fibrillation, that bonding between fibers took place by some action akin to recrystallization and that the increased strength resultant on beating was due simply to the much greater area available for such bonding. Later work at the Laboratories has served to confirm and clarify this hypothesis but has not changed it in its essentials.

In the hypothesis just mentioned the actual bonding is ascribed to a condition closely analogous to that existing in a piece of lump sugar. That is to say, the cellulose fibers are held together by a crystalline bond. It is not obvious how this can be so and some critics have flatly stated that it is impossible. Thus Strachan, before the Technical Section of the Papermakers' Association of Great Britain and Ireland in 1932 said:—

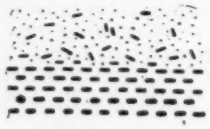
"The union of two crystalline surfaces demands either of two conditions as follows:

"(a) The surface between which the union takes place must be liquified, or free to move under pressure. This freedom of movement may be brought about by a malleable condition of the material (as in lead or paraffin wax) or by the presence of a solvent (as in the case of sugar and water).

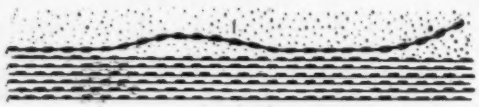
"(b) The crystalline surfaces between which the union takes place must be similarly orientated, so that the space-latices of the two surfaces are congruent, after which pressure must be applied.

"Now fibrous cellulose, after treatment in the beater does not fulfil any of these conditions. It is not malleable and there is no solvent present. The space latices, far from being similarly orientated, are crossing at every angle."

The conditions are not quite as exacting in reality as set forth by Strachan. Powdered crystals are caused to bond by pressure every day in the making of medicinal tablets. Indeed the main problem in this work is to prevent the bonding from being so strong as to interfere with ease of solubility. The lack of malleability of wet cellulose is a question of terms and as for solvent there is plenty of the best general solvent known, namely, water.



SHORT MOLECULES.
DISSOLVE AND RECRYSTALIZE
AS UNITS.



LONG CHAIN MOLECULES.
UNITS DISSOLVE AND RECRYSTALIZE
BUT CHAIN DOES NOT
DISSOLVE AS A WHOLE.

FIG. 1

It may be well to go into this subject of solubility a little more fully. Consider a crystal of some simple material, say sugar. It is made up of a large number of sugar molecules arranged in some definite regular pattern. If this crystal is placed in water it starts to dissolve. That is to say, the sugar molecules in the surface of the crystal, by virtue of their attraction for water, surround themselves with water and are no longer held to definite positions by the attraction of other sugar molecules in the crystal. But this process of solution is not all one-sided. As soon as some sugar is in solution there is a corresponding tendency for sugar to leave the solution and take up fixed position on the crystal surface. This tendency is increasingly great as the concentration of dissolved sugar increases. At some concentration the rate of recrystallization equals that of solution and the saturation point is reached. These rates may be high or low at the saturation point but they must be equal. If the rate of solution is high, there will be required a high concentration at the saturation point to balance it and vice versa. Solubility may then be looked upon as a matter of time. If we make the same assumptions that Langmuir made in his classic absorption theory we can calculate the fraction of time any average molecule stays on the crystal surface before it returns to solution. From this viewpoint one would describe a very soluble material as one where the fractional life of surface molecules is small when the crystal is in contact with solvent. (See Fig. 1.)

When we turn to cellulose we find that the cellulose molecule is a very long one made up of upwards of a hundred glucose anhydride units. From the chemical structure of these units we may expect that they will have solubility relations very similar to that of the sugar, i.e., be very soluble in water, much less so in alcohols and hardly at all in hydrocarbons. But assuming that this is true, it does not follow that one should be able to make solutions of cellulose in the usual sense. It means that the fractional time during which the individual glucose units stay on the crystal surface is about the same as in the case of the sugar. But each and every one of the whole chain must simultaneously go into solution if cellulose is to dissolve in the usual sense. That is extremely unlikely to happen and it is more to be expected that water will surround parts of the long chain while the remainder is attached to the solid. In this way cellulose may be said to be dissolved even though the solution is only one in a special sense.

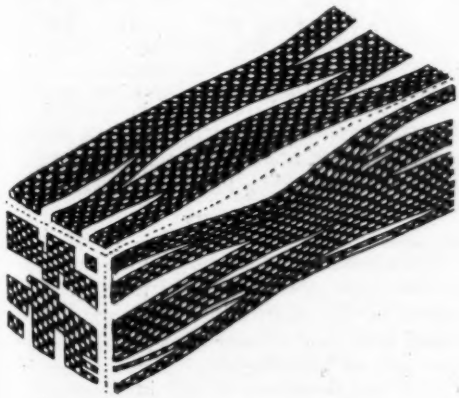
Assuming that some condition not far from that described actually exists it is easy to see how bonding may take place. If some part of the long chain is in solution and to some extent free to move, it is quite to be expected that it may become attached to a neighboring crystal if it be close enough. It is not necessary that there be any close similarity in orientation of the crystals for this to happen; proximity is the main requisite. It will also be obvious that the strength of such bond joining crystals is much less than the strength of the crystal proper because only a small fraction of the molecule length can exert its strength of attachment to either. Because, too, of the smaller number of units of the chain built into each crystal, solvents will cause breaking of such bonds much more easily than they will effect the break-up of crystals. Non-solvents will not have this destructive effect on bonding so we need not expect to break up paper in kerosene as we do in water. Neither need we expect to form bonds in such liquids. If the liquid has, like alcohol, a partial solubility effect on the carbohydrates then we can expect some

softening action on the bonds and some tendency to form them if the liquid is evaporated. All this is in accord with the known properties of cellulose fibers.

It must be stated, however, that this picture of the mechanism of bond formation is one which is far from being proved. It is simply hypothesis based on the generally accepted ideas of solution and crystallization, the effect of molecule length on such solubility and the accepted knowledge of the physical and chemical structure of cellulose. It is entirely denied by Strachan, who holds that bonding is effected by entanglement of fibrils. Dr. Harrison, also of the British Technical Section, disagrees with the idea of bonding by recrystallization on the ground that perfect orientation is essential to this. He inclines toward the idea of the formation of a cellulose "mucilage." His views are not really very different, however, because the hypothesis stated is essentially a statement of the way in which a cellulose mucilage is conceived to function.

The way beating operates to produce the results it does is a slightly different matter and involves the somewhat grosser but still quite minute structure of cellulose fibers. All such fibers are known to be made up of a structure of elements generally known as fibrillae which can be demonstrated microscopically, Fig. 2. The arrangement of the fibrillae in a fiber is different in fibers of different origin. In linen and ramie they are roughly parallel to the fiber axis; in cotton they are spiralled at about 45 degrees to that axis; in wood fibers the direction varies from nearly parallel in the fiber interior to nearly at right angles in the surface. See Fig. 3. In the fibrillae the crystals of cellulose are nearly, if not absolutely, parallel to the direction of the fibrillae. These things are known from the microscopic work of various investigators. Not so definitely known is the arrangement by which the crystals build up the fibrillae and here we are again in a region of speculation. But the data from X-ray crystallography and from vapor pressure experiments give some hints to guide such speculation.

When cellulose swells in water or in dilute alkali or in salt solutions such as zinc chloride it is not the arrangement of cellulose molecules in the crystal which is affected. X-ray examination shows this to be unchanged. Therefore swelling must take place by the moving apart of such crystals. Swelling is not unlimited in these cases, hence



CONCEPT OF STRUCTURE OF FIBRIL LAYER.
UNIT PARTS OF CELLULOSE MOLECULES REGULARLY SPACED, NO DEFINITE POSITIONS OF ENDS OF CELLULOSE CHAINS. CRYSTAL STRUCTURES BONDED TO EACH OTHER BY BRANCHING. FRACTURE TENDS TO FORM PARALLEL BUNCHES OF CELLULOSE CHAIN MOLECULES (FIBRILLAE).

FIG. 2

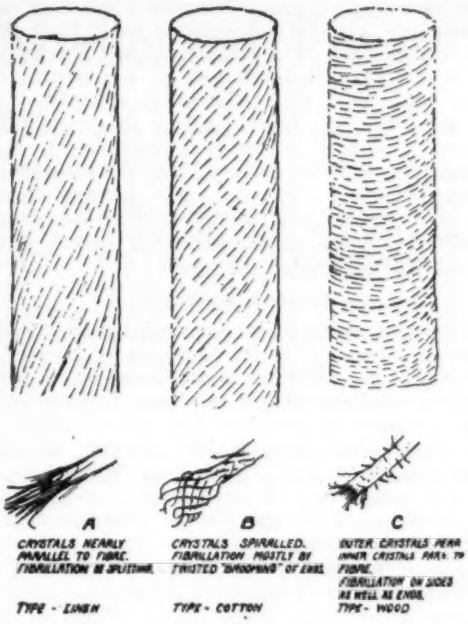

A
CRYSTALS NEARLY PARALLEL TO FIBRE. FIBRILLATION BY SPLITTING.
TYPE - LINEN
B
CRYSTALS SPIRALLED. FIBRILLATION MOSTLY BY TWISTED "UNWINDING" OF ENDS.
TYPE - COTTON
C
OUTER CRYSTALS PERP. INNER CRYSTALS PARA. TO FIBRE. FIBRILLATION ON SIDES AS WELL AS ENDS.
TYPE - WOOD

FIG. 3

some kind of bonding must be maintained in the swollen mass. The conception arrived at after study of such data and of our own vapor pressure experiments is that the crystals are not separate and discrete particles but that, due to the long chain molecules, the crystals are all united by branching from one to another. Cellulose is laid down during the plant growth in the presence of much water. In the growing plant the volume of the water amounts to as much as the volume of the cellulose or more. It is conceived that this water occupies the space between the branching cellulose crystals. When laid down in the plant, the cellulose structure, though strongly bonded together, is without strain. But on removing this water by evaporation a tension is set up as will be explained more fully below and this tension draws the structure more closely together. This deformation introduces strains which can only be relieved by the return of the water. Some additional bonding is produced as the crystals are brought together and not all of these are redissolved on rewetting so that the new volume is less than the original. This causes the amount of water held at a particular degree of humidity to be less on absorption than it is on desorption.

The particular experiments leading to this conclusion were a series in which the amount of sorption of cellulose was determined at different vapor pressures of water, of methyl alcohol and of propyl alcohol. It was found that over most of the range, cellulose sorbed larged amounts of the alcohols, both by volume and by weight, than it did of water. Various ways of plotting the results were tried in an effort to find some explanation which would be in harmony with the numerical data obtained. Only one was satisfactory in this respect. When the volume of liquid sorbed was plotted against the internal liquid tension corresponding to the various vapor pressures it was found that, over the greater part of the range, the values were almost the same regardless of the liquid used. From this the hypothesis was reached that the common factor in these experiments is the force necessary to deform the cellulose structure as the liquid evaporates. This factor has been largely overlooked in previous work on the swell-

ing and shrinkage of gels. Whereas it has been usual to start with dry cellulose and look for some force originating in chemical action, to cause swelling, this hypothesis looks at water swollen cellulose as the normal or unstrained state, with dry cellulose as a strained one in which the strains may be released by allowing a return of the water. Putting it in slightly different words, the older conception was that the dry state was the natural one and that some force was required to cause swelling whereas we now regard the wet and swollen state as the natural one and look for a force causing shrinkage, finding this force in the internal tension of the liquid.

### Practical Application

The practical value of such knowledge of the intimate structure of fibers lies in the better understanding of the mechanism of the properties made use of in papermaking. To follow the effects of this structure wherever it has an influence on pulp use would be to go into all phases of the pulp and paper industry. It will suffice to take the extremely important beating process as an example. It is one which enters into all papermaking, even into news print manufacture, for the grinder is essentially a very specialized type of beater.

Broadly speaking the beating process is not effective unless carried out with water as the liquid. There are a few highly polar liquids which act like water but they are very few. It seems essential that the liquid used be one which swells the fiber; otherwise only cutting action will result. This was very well brought out by Kress and Bialkowsky. The immediate question arises as to how this swelling takes place and why it is a necessary preliminary to beating.

From the picture given earlier as to the structure of the fibrils the mechanism of swelling in water is to be explained on the basis of its effecting solution of the weaker bonds formed during pulp drying and thus allowing release of the strains introduced at the same time. Other liquids, being much less effective solvents for carbohydrates than is water, cannot dissolve these bonds to any appreciable extent and therefore do not permit swelling. Pulp which has been merely soaked in water has a very considerable measure of papermaking strength. That is to say, a very considerable measure of adhesion exists between fibers when they dry in contact. Doughty found that very nearly as much tensile strength can be developed without beating as with it, provided only that the wet pressing is so carried out that the final sheets have the same density. This means that more wet pressure has to be used on the unbeaten stock. Consequently we must view the effects of beating as being equivalent in large measure to such wet pressure.

Now the main thing accomplished by the wet pressure is to bring about a more dense sheet. That is to say, it brings a closer packing of the fibers and, consequently, a greater total area of contact of fiber to fiber. Beating does the same thing but in a different way. First, by mechanically flexing the swollen cellulose structure, it causes breakage of some bonds which water alone does not dissolve; this causes the fibers to be much more flexible and perhaps swollen to a slightly greater extent. Consequently pressure is more effective in compacting the sheet. As mechanical flexing of the fibers goes on still more, rupture of bonds takes place and finally some of the torn cellulose fabric is dislodged from its position in the fiber and appears externally as distinct fibrils. Because of the directional effect of the cellulose crystals in the layers from which the fibrils are derived, rupture of this layer is very much more likely to take place in a direction parallel to these crystals than otherwise. Whence the ruptured parts which appear as fibrils tend to be long and narrow and show a fiber-like appearance of their own.

Both the softening produced by breaking of internal bonds and the fibrillation, or the conversion of internal surface to external, lead to greater possibilities of contact among the fibers and hence to greater strength. If this were the sole effect of beating, the additional strength would not be accompanied by much additional density. But the subdivision of the fibers into fibrillae has another result. It subdivides the water spaces or voids between the main fibers into many more smaller ones. Because of this the water in the sheet can and does exert a strong tensile force on the sheet structure during the drying. Drawing the structure closer together in this way increases its density or in other terms, produces shrinkage, always greatest in the direction of sheet thickness. Such tension effects only become of great magnitude when the water layers are thin, and, in consequence, dividing the liquid into a multitude of small portions greatly increases the shrinkage force.

In practical beating operations it is impossible by any means known at present, to avoid fiber cutting. The best that can be done is to regulate the roll pressure or clearance so that the balance between cutting and fibrillation is thrown one way or another. For maximum strength development it seems obvious that the fiber length should be maintained and the action confined to what we may term bruising or roughing up the surface. This is particularly the case with tearing strength where fiber length plays so great a part. Rupture of paper is, in most cases, a matter of pulling the fibers apart rather than breaking them. Long fibers present much more possibilities of contact than short ones and hence should produce stronger paper. Fiber debris, however, can act to a large extent by bridging spaces between long fibers where otherwise contacts would not be possible. In groundwood this is particularly so for here the fines are largely the same material as the longs. In chemical pulps the fines, particularly before beating, are not the same as the longs and consist largely of more degraded cellulose as shown by their lower viscosity and alpha cellulose values, indicative of shorter length molecules. Cutting of the fibers, therefore, seems to be a thing to be avoided except insofar as it is necessary to get ease of formation. Long fibers are undoubtedly more difficult to get into even formation but to dodge the difficulty by tightening the jordan gets formation at the expense of strength. The very long fibers of rag pulps, of course, make cutting necessary and probably it does little harm in this case. On account of the structure of wood pulps where the fibrils of the surface layer are nearly at right angles to the fiber axis there is a limit to which fibrillation may be carried. Once this surface is gone the remainder quickly disintegrates and the whole fiber breaks up into fibrils with a corresponding loss of tear resistance.

### Summary

In the above, an attempt has been made to present a picture of the essential elements of fiber structure and to indicate how these operate in papermaking. The further development of this picture into ways and means of getting desired qualities at lower expense of power and manipulation and of avoiding detrimental action is left for further technical development and invention.

## Meeting of Approved Pulp Testing Chemists

There will be a meeting of all approved pulp testers and pulp importer traffic managers with the Joint Committee in Room 4D at the Waldorf-Astoria Hotel, New York, Tuesday, February 19th, at 5:00 P.M.

# Insect Repellent and Medicated Paper

By Joseph Rossman[1]

In this paper abstracts are given of U. S. patents relating to inventions for making paper, wall boards or carpet linings having substances incorporated which will repel moths and other insects. Abstracts of patents are also included for paper containing disinfectants.

1. Glynn 12,361. February 6, 1855.

This patent describes introducing into paper pulp soluble soaps and converting them into insoluble soaps for the purpose of preventing mildew and protection against insects, and vermin. The method is carried out as follows: Into 250 pounds of pulp, 9 pounds of soap, dissolved in boiling water is added, and when this soap is thoroughly incorporated with the pulp, metallic salt such as copper sulfate is added to render the soap insoluble.

2. Perkins 76,342. April 7, 1868.

This patent describes a lining for boxes or closets consisting of a sheet of aromatic wood, combined with paper.

3. Thompson 85,188. December 22, 1868.

The invention consists in watercloset paper, formed by introducing tar into the paper pulp.

4. Russell 88,519. March 30, 1869.

This patent describes a process for the manufacture of paper and paper-board from cane disintegrated by the explosive force of steam, or other similar fiber mixed with tobacco, or a decoction of tobacco. The paper is used as wrapping paper for woolen and fur articles to protect them from moths and other insects.

5. Jaques 107,690. September 27, 1870.

Flowers of sulphur or pulverized sulphur are mixed with paper pulp to produce a paper for wrapping fruit.

6. Crane 124,336. March 5, 1872.

This invention consists of paper having tobacco or cedar wood applied to its surface in such manner as to adhere thereto. In making the paper on a cylinder machine ground cedar wood is sifted on the web between the surface of the pulp in the vat and the coucher. The ordinary sizing machine may also be used for the purpose of applying the cedar or tobacco, which might be either mixed with sizing or sifted or sprinkled on the sizing after it has been applied. Sheets of paper already made might have the cedar or tobacco applied to their surfaces by sifting or sprinkling on them after first coating them with an adhesive.

7. Baquol 131,242. September 10, 1872.

Mosquito repellant paper is prepared by applying a thick solution of camphor in alcohol. The sheet is then rubbed with a small quantity of oil of anise seed.

8. Eames 134,983. January 21, 1873.

A solution of cresylic or carbolic acid is added to paper pulp to produce a medicated paper.

9. Chipman 156,879. November 17, 1874.

Fibrous material is immersed in a concoction of red cedar, with aluminous or iron mordants.

10. Cobb 174,484. March 7, 1876.

The invention consists in making the board of paper, either wholly or in part, from stock obtained by reducing cedar wood to pulp.

11. Tangeman 176,706. April 25, 1876.

A compound for treating carpet lining paper consisting of five pounds of cedar, three pounds of tobacco stems, two pounds of hops, one-half pound of tansy and one pound of sal-soda.

12. Brown 194,986. September 11, 1877.

Cedar wood is reduced to pulp by grinding and is then formed into sheets of paper which retain the color and odor of the original wood.

13. Rodgers 208,853. October 8, 1878.

Paper is saturated with coal tar and phenol for protection against moths.

14. Page 246,335. August 30, 1881.

Paper is impregnated in a bath of paraffin and naphthaline.

15. Locke 264,889. September 26, 1882.

The invention consists of a carpet lining made from cedar bark.

16. Wells 274,425. March 20, 1883.

According to this patent camphor, tar, tobacco, or other moth preventative is located between layers of wadding or batting, and inclosed by an external covering of perforated board, veneer, or paper, which will permit the odor of the inclosed material to be diffused, yet prevent such material from coming out or getting into contact with garments.

17. Manahan 276,844. May 1, 1883.

This patent describes a pad composed of a number of layers of tar-paper intended for the extermination of moths.

18. Wheeler 302,073. July 15, 1884.

Paper is treated with vaseline, glycerine, paraffine, or any of the animal or vegetable oils which act as a vehicle for any desired medicament.

19. Vaughan 310,625. January 13, 1885.

Paper is coated with a composition of five pounds of pitch; one-half pound of rosin; one-half pint linseed-oil; one ounce beeswax; four drams carbolic acid, liquid or crystallized.

20. Regan 339,810. April 13, 1886.

Paper for the protection of clothes from moths and other insects is prepared by saturating with a decoction of tobacco and cascarilla-bark.

21. Childs 351,424. October 26, 1886.

Layers of paper having naphthaline interposed.

22. Boyer 351,897. November 2, 1886.

Paper is impregnated with coal or gas tar, thirty-five parts; crude petroleum, five parts; oil of cedar, ten parts; oil of pennyroyal, five parts; oil of sassafras, five parts; oil of citronella, five parts; creosote, five parts; carbolic acid, twenty-five parts, and sulphur, five parts.

23. Mathieu 359,166. March 8, 1887.

A wrapping made of two sheets of paper, inclosing a film of disinfecting substance.

24. Childs 362,249. May 3, 1887.

Sheets of paper are united with paste containing naphthaline.

25. Tsheppe 397,259. February 5, 1889.

The invention consists in immersing unsized paper, into a bath of molten naphthaline.

26. Manahan 399,999. March 19, 1889.

Paper is immersed in a bath containing naphthaline, glycerine and oil of mirbane.

27. Rudisch 663,684. December 11, 1900.

Anti-moth paper is provided upon one side with a coating of pine-tar and upon its other side with a coating of pitch.

[1] Member TAPPI, Patent Examiner, U. S. Patent Office, Washington, D. C.

28. Pray 766,842. August 9, 1904.
Wall paper containing creosote.
29. Sutor 785,838. March 28, 1905.
Wood pulp sheets are sprayed with a solution of corrosive sublimate or a solution of chloride of zinc, resorcin, naphthalene, formaldehyde, thymol, carbolic acid, salicylic acid, cresylic acid, beta-naphthol, or any of the known efficient antiseptics.
30. Apel 799,215. September 12, 1905.
This invention relates to a process for manufacturing a paper which when burned gives very nearly the same aroma and taste as a tobacco leaf or wrapper. In order to produce the paper, tobacco leaf, veins, or fibers are cleaned and broken up and then placed in a water solution of hydrate of lime mixed with ten per cent hydrochloric acid. The material is left in the solution for about four to eight days until it becomes perfectly soft and with fine fibers. The material then washed, ground and made into paper, ten to forty per cent of pulp (rags or cellulose) being added. The paper is thoroughly wetted with tobacco decoction each 100 liters having one liter of Jamaica rum, 2.5 kilograms of alcoholized cascarilla rind, five kilograms of alcoholized tobacco, and eight grams of coumarin dissolved in 96° alcohol.
31. Sidwell 1,248,181. November 27, 1917.
The invention relates to wall board for chicken houses, stables, dairy barns and the like. It consists of a board having its face impregnated with approximately equal parts creosote and asphaltum to which an alkali has been added.
32. Nagle 1,283,422. October 29, 1918.
Paper containing pulp mixed with cedar oil, an emulsifying agent for the cedar oil, licorice, and alcohol.
33. Currier 1,368,547. February 15, 1921.
The method described in this patent consists in securing together continuously two paper webs with molten pitch and in spraying moth-proofing substance continuously upon the web while it is still hot.
34. Kennedy 1,512,104. October 21, 1924.
Paper is coated on one face with naphthaline and on the other face with paraffin.
35. Fairbrother 1,618,416. February 22, 1927.
Mildew-proof paper containing an alkaline salt of a trichloro-phenol.
36. Grunbaum 1,746,648. February 11, 1930.
Insect-proof paper containing a cinchona derivative.
37. Ellis 1,839,660. January 5, 1932.
A process for producing a stiff water-proof, vermin-proof sheet consists in forming from pulped wood a soft porous thick slab, drying the slab, applying sulphur to the opposite faces of the slab, drying, applying a press pressure while heating, and then removing the product from the press while hot.
38. Lathrop 1,880,965. October 4, 1932.
A fiber product having integrally distributed therethrough an insect and fungi toxic substance initially formed as a slurry and subsequently distributed throughout the product in its process of manufacture, the slurry comprising a soluble salt of arsenic precipitated with lime.
39. Munroe 1,880,971. October 4, 1932.
A method of integrally treating a fibrous product wherein the fiber from which the product is formed has added thereto while in water suspension emulsified chloro-naphthalene with the subsequent addition of a demulsifying agent, whereby the chloro-naphthalene is precipitated upon the fibers.
40. Munroe 1,880,972. October 4, 1932.
Fiber products sized and rendered fungi proof and insect toxic with rosin, arsenic, ferric chloride, and alum.
41. Sutherland, Jr., 1,884,367. October 25, 1932.
A rot and water and termite-proof fiber board, comprising interlaced fibers having their interstices charged with a waterproofing material, and particles of zinc meta-arsenate imbedded in the waterproofing material.
42. Curtin 1,900,162. March 7, 1933.
Wallboard comprising a shaped and dried body of initially loose plant fiber having crystals of zinc-meta-arsenite disseminated therethrough.
43. Lathrop 1,935,196. November 14, 1933.
A fiber product having distributed throughout the body thereof an insect and fungi inhibiting substance comprising the reaction product of a metalloid of the arsenic family and alum.
44. Sweeney 1,937,366. November 28, 1933.
The process of manufacturing lumber from cornstalks consists in breaking up of the cornstalks in particles, injecting into the resultant mass a corrosive sublimate, and forming the mass into lumber.
45. Nagelvoort, 1,939,404. December 12, 1933.
The process comprises wet grinding sulfur in the presence of a peptizing agent having tanning properties to an extreme degree of fineness, removing the peptizing agent from the resulting sulphur pulp, mixing the sulphur with paper pulp, forming the pulp mixture into shape and hot pressing.
46. Sweeney 1,946,952. February 13, 1934.
The process of manufacturing synthetic insulating lumber from cornstalks consists in the cooking of the cornstalks in water, disintegrating the material by a suitable machine, commingling the pieces with water, injecting copper sulphate solution into the disintegrated mass, and forming the mass into lumber by pressing and drying.
47. Barber 1,947,451. February 20, 1934.
A paper sheet having a precipitate of copper ortho phenyl phenate of not less than 1% by weight.
48. Cyr 1,954,800. April 17, 1934.
White water from the paper-making operation is sterilized by subjecting it to the action of a zinc sulphide pigment while maintaining a pH value not lower than 4.5.
49. Munroe 1,968,418. July 31, 1934.
The method of insect proofing a fibrous product consists in adding to a fraction thereof ferric chloride and arsenious acid, and then ad-mixing said fraction with the remainder of the fibrous material to form the product.

## To Improve Swedish Ground Wood

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., February 11, 1935—Improvement in the quality of Swedish mechanical pulp through increased strength and wearing quality, was recommended at a meeting of producers of wet mechanical pulp in northern Sweden, according to a report from Acting Commercial Attache Osborn S. Watson. An officer of one of the companies controlling a considerable share of the Swedish production pointed out at this meeting that the present market is not encouraging despite the general improvement mechanical pulp being thrown on the market, with a consequent weakening in prices. He also pointed out that since 1929 manufacturers in Norway had increased their output 32 per cent and those in Finland 55 per cent.

In view of the increases in the other two countries any further cut at this time by Swedish producers seems unwarranted. Efforts in increasing the quality of the Swedish product so far have resulted in turning out an article requiring an admixture of only 20 to 25 per cent chemical pulp for the production of newsprint, and researches now being carried on indicate that even better results can be expected.

# Pulp and Paper Industry Literature Review

**Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman**

**Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.**

### Bleaching

**Bleaching Chemical Pulp.** David B. Davies. Can. pat. 340,346 (March 27, 1934).—By the action of chlorine introduced directly wood pulp is bleached to the extent of 30 to 50%. The pulp is separated from the liquid portion of the stream, washed, bleached an additional 20 to 61% by means of calcium hypochlorite solution, separated from the liquid portion and washed. Bleaching is completed with calcium hypochlorite solution and the fully bleached pulp is separated and washed.—A.P.-C.

**Process and Apparatus for Bleaching Wood Pulp.** David B. Davies. U. S. pat. 1,968,994 (Aug. 7, 1934).—Pulp is bleached at high consistency by circulating in a vertical tank provided with a central unenclosed vertical worm and having near the top one or more hollow, perforated, rotating, levelling arms through which the bleach liquor is fed at the same time as the pulp is fed into the tank through a separate inlet.—A. P.-C.

**The Bleaching of Wood Pulp in the Gilg Silo.** G. V. Holten. Wochbl Papierbabr. 65, No. 31; 551-52 (Aug. 4, 1934).—Description of a process of bleaching pulp by mixing the pulp with bleach liquor and allowing it to drain and bleach for several days in a silo. Operation and advantages given.—J. F. O.

**Annual Report for 1933 on the Bleaching of Pulp.** Ladislav Rys and Alfred Bonisch. Zellstoff U. Papier 14, No. 3; 97-100 (March, 1934). A bibliography and resume of the more important studies and patents on the bleaching of pulp which appeared during 1933—J.F.O.

**New Method of Production of Celluloses of Different Viscosities.** Activated bleaching. A. Zakoshchikov, D. Tumarkin and Tz. Meshnikova. Iskusstvennoe Volokno (Artificial Fiber) 5, no. 4:22-28 (1934); C. A. 28:6299—A study was made of regulated reduction of viscosity of linters cellulose bleaching with the aid of ammonia as an activator of the decomposition of calcium hypochlorite. Optimum activation and viscosity reduction were obtained by introducing alkali-steeped linters into a bleaching mixture containing active chlorine and ammonia in proportions of 10:1. By bleaching 1 hour at 13-15° the viscosity was reduced with 0.2 percent active chlorine without ammonia to 175 and with ammonia to 43; with 0.3 percent chlorine, respectively, to 149 and 12.7; and with 0.4 percent chlorine to 181 and 9.5. The degree of viscosity can also be regulated by working with a constant concentration of active chlorine and varied proportions of ammonia. Thus, by bleaching steeped linters of viscosity 700 for 1 hour at 13° with 0.3 percent. Chorine, the viscosity was reduced to 150 without ammonia and with chlorine-ammonia in proportions of 50:1, 20:1, 10:1 and 2:1, respectively, to 90, 33, 12 and 300. Thus with the increasing proportions of ammonia, the activation of decomposition of hypochlorite increases and then at the ratio 2:1 is checked, with the resulting cessation of bleaching and a viscosity of the material considerably higher than is obtained by bleaching without the activator. The activation is closely connected with the formation of $NH_2Cl$, which is consumed in the process of decomposition of hypochlorite. Steeped linters with Viscosities of 3000, 2000, 1000, 700 and 31, when bleached under equal conditions with the aid of ammonia, produced celluloses of equal viscosities (7.9-11.9). The industrial use of the process is rendered difficult by the high velocity of decomposition of calcium hypochlorite (and bleaching) on addition of ammonia to the bleaching liquor. Thus, by introducing linters immediately, 5, 15 and 30 minutes after mixing, the resulting viscosities of the bleached cellulose were, respectively, 23, 30, 50 and 97. The difficulty was overcome by mixing steeped linters with filute aqueous ammonia (0.05-0.2 percent), pressing the material out and introducing it into the bleaching liquor. By this method the bleeching proceeds uniformly throughout the material, giving a cellulose of consistently even viscosity (8-10) and allowing a wider limit of the proportion of chlorine to ammonia (5:1-10:1) for optimum results. While the viscosity of cellulose is lowered with the increased consumption of chlorine, it is little affected by variations in temperatures (up to 35°) of the ammonia-activated bleaching. While the ammonia activation is possible only in alkaline medium, the degree of alkalinity has no effect on lowering of viscosity. From the fact that bleaching progresses satisfactorily in 0.25 percent sodium hydroxide and ceases in 0.6-1 percent sodium hydroxide, while the viscosity is reduced to an equal degree (12-13-17), it follows that the reduction of viscosity on bleaching of cellulose and the bleaching are two different processes proceeding independently of each other. C. J. W.

### Sizing

The use of glue from leather waste in the manufacture of mottled paper. G. Leschanowsky. Gelatine, Leim, Klebstoffe 1:55-58 (1933); C. A. 28, 5981.—A description of the use of glue from leather wastes in the production of staining colors and the sizing of paste colors in the manufacture of variegated or mottled papers.—C.J.W.

**Glue from Leather Waste as a Sizing Material in the Paper Industry.** G. Leschanowsky. Gelatine, Leim, Klebstoffe 1:42-43 (1933); C. A. 28:25981.—A historical review of the use of different kinds of glue for sizing paper with special consideration of hardened glue from leather waste.—C. J. W.

**Effect of Phosphoric Acid on Sizing and Strength of Paper.** P. V. Shumilov. Vsesoyuznuii Nauch.-Issledovatel. Inst. Bumazhnoi Tzellyuloznoi Prom Materialui (Trans. All-Union Sci. Research Inst. Paper Cellulose Ind.) 1933, No. 2:97-104; C. A. 28:5981—Solutions of alum (produced from nephelite tailings and concentrates) containing 0.4-2.2 percent. phosphoric anhydride to one kilogram of fiber, showed no effect on sizing and the strength of paper. The effect of the anhydride on the durability of paper is being investigated.—C.J.W.

**Technical Points in the Sizing of Paper.** G. H. Lafontaine and E. W. Elliott, Pulp Paper Can. 35; 405-408 (July, 1934); Paper Mills 57, No. 30; 8, 14, 17 (July 28, 1934).—A brief discussion of the main factors affecting paper sizing.—A.P.-C.

**Paraffin Emulsion and Process of Making the Same.** Hubert L. Becher assignor to Bennett, Inc. U. S. pat. 1,973,692 (Sept. 18, 1934).—An aqueous emulsion of paraffin wax suitable for sizing paper or board is prepared by melting a mixture of paraffin wax and Montan wax, adding with continuous stirring an aqueous solution of an alkali such as caustic soda in amount sufficient to effect as complete a saponification of such wax as its nature will permit.—A.P.-C.

**Paper Sizing and Composition Therefor.** George A. Richter assignor to Brown Co. U. S. pat. 1,969,856 (Aug. 14, 1934).—The injurious effect of surface-sizing on the tear resistance of paper is reduced or completely nullified by mixing highly-gelatinized cellulose pulp with the glue-sizing bath.—A.P.-C.

**Sizing Paper.** Papeteries Navarre, Soc. Anon. Brit. pat. 404,386, (Jan 18, 1934).—The cellulose is sized before its use for the manufacture of paper. The sizing agents, *e.g.*, an emulsion of paraffin, may be applied to the cellulose in suspension in water or while the sheet of cellulose is in process of formation or completely formed.—A.P.-C.

**Sizing Papers with Roumanian Rosin.** V. Hodivoanu. Bul. Chim. Soc. Romane Chim. 35; 11-16 (1934). —The efficiency of Roumanian rosin from *Picea excelsa* L., as a sizing agent compared favorably with that of an American rosin. Ninety per cent of the Roumanian forests constitutes a potential rosin source sufficient to supply the domestic paper industry.—A.P.-C.

**Rosin: Grades, the Standard Unit, the Round Barrel.** George F. Kennedy. Paper Trade J. 99, No. 13; 27-28 (Sept. 27, 1934)—A.P.-C.

**Rosin and Rosin Size.** George F. Kennedy. Paper Maker & Brit. Paper Trade J. International No. 64; 73-80 (1934).—A comparison of neutral and free, liquid and dry rosin sizes, with Bewoid rosin size.—A.P.-C.

**Waterproofing Fibrous and Other Materials.** Judson A. DeCew. U. S. pat. 1,965,630, (July 10, 1934). Paper is sized with a mixture of ammonium resinate and aluminum hydroxide, the ammonia being driven off during drying and leaving the paper practically neutral. The process is claimed to give a better degree of sizing than is possible with any combination of sodium resinate and alum, and to be applicable to waterproofing calcareous cements.—A.P.-C.

**Sized Paper.** Henry V. Dunham assignor to The Casein Manufacturing Co. of America, Inc. U. S. pat. 1,965,693 (July 10, 1934).—Paper sizing or coating is prepared by heating 100 parts of meal of legume-seed (preferably soy-bean) around to about 80-mesh to 160°F. with 400 parts of water containing 6 parts of caustic soda, and then passing through a colloid mill.—A.P.-C.

**Liquid Rubber Milk from Para Rubber Tree (Hevea Brasiliensis).** Zellstoff U. Papier 13, No. 6: 260 (June, 1933). A list of the important patents concerning latex from hevea brasiliensis in the United States, England, and Germany during the past ten years or so.—J.F.O.

**An Apparatus for the Preparation of Finely Divided Rosin Emulsion.** Zellstoff U. Papier 14, No. 2: 59-60 (Feb., 1934). By means of illustrations, the apparatus covered by the French patent taken out by Antoine Cyprien Gillet, for the preparation of finely divided rosin emulsions is described.—J.F.O.

**Process for the After Treatment of De-Sized Papers.** Shigenari Yano, Shizuikaken, Japan. Ger. pat. 599,196 (June 30, 1933). Paper which has lost its sizing property, through storage or for any other reason, may regain this property and without the use of chemicals. The paper to be treated is subjected to a sufficient quantity of moist air at 55 to 100°C.—J.F.O.

### Dyes and Dyeing

**The Effect of pH upon the Adsorption of Dyes by Cellulose and Fillers.** Leo Friedman and Delman Vernon Kuykendal, Jr. Paper Trade J. 99, No. 12; 103-105 (Sept. 20, 1934).—Studies of the adsorption of acid and basic dyes upon alumina, cellulose, and paper fillers demonstrated the important part played by the freshly precipitated alumina and the necessity for careful control of the pH. Studies of the adsorption of methylene blue upon cellulose, kaolin and talc showed that the process is true adsorption.—A.P.-C.

**Eosin Dyes and their Use in Paper Making.** Maurice Déribéré. Papier 37; 615-624 (July 1934).—A description of the constitution of eosin dyes and of the proper method of using them in paper making.—A.P.-C.

**Testing Dyestuffs on Receipt at the Paper Mill.** Maurice Déribéré. Papeterie 56; 622-629, 678-685, 734-71 (June 25, July 10, 25, 1934).—A general discussion of the tests which should be applied to dyestuffs used in paper making, and more particularly of the services rendered by the photo-electric colorimeter.—A.P.-C.

**Fastness-to-Light of Synthetic Dyestuffs in Paper.** J. G. Grundy. World's Paper Trade Rev. 101; 1240, 1242, 1280-1285, 1399-1402, 1442-1446 (April 20, May 4, 1934); Paper Makers & Brit. Paper Trade J. 88, No. 1: TS138-141 (July 1934). From the results of a large number of experiments with various dyestuffs applied to different furnishes under various conditions it is concluded that no theory consistently holds good for all cases and no theory is capable of scientifically expressing the fading of dyestuffs on paper.—A.P.-C.

**Stability of Colored Papers Toward Light.** Kurt Berndt. Zellstoff u. Papier 13, No. 6: 271-73 (June, 1933).—Although sunlight is the best means for testing the stability of colored papers toward light, there are such great variations throughout the year, that a mercury vapor lamp with a quartz tube is used with success. Different classes of dyes and different dyes are classified as to their stability towards light, but a dye which resists light is practically valueless if the fiber in the sheet is sensitive towards light. Fillers and sizing may cause the sheet to change color in contact with light. A bibliography accompanies the article.—J. F. O.

**The Determination of the Dye Used in Colored Papers.** M. Grundy. Zellstoff u. Papier 13, No. 6:273-75 (June, 1933).—By testing colored papers with different kinds and concentrations of acids, various reducing agents, solvents, etc. the author found that it was possible to determine the dyes used. Acid, basic and direct dyestuffs, as well as dyes of other groups are determined.—J. F. O.

**Recent Processes for the Production of Colored Paper on the Paper Machine.** A. Foulon, Wochbl. Papierfabr. 65, No. 33: 584-86 (Aug. 18, 1934).—Seven different processes patented in Germany for the production of colored paper on the paper machine are described.—J. F. O.

### Coating Materials

**Adhesive and Coating Composition Suitable for Use on Paper.** Louis L. Larson assignor to Grasselli Chemical Co. U. S. pat. 1,949,914 (March 6, 1934).—Sodium silicate and cupramino solutions are mixed together in specified proportions to form a water-resistant adhesive.—A. P.-C.

**Resinous Composition Suitable for Impregnating and Coating Paper.** Theodore F. Bradley assignor to The

American Cyanamid Co. U. S. pat. 1,953,583 (April 3, 1934).—A "polybasic" acid-polyhydric alcohol resin is used together with a waxy ester of a higher monohydric alcohol such as cetyl, ceryl or myricyl alcohol and a higher fatty acid such as stearic, palmitic, oleic, linoleic or eleomargaric acid.—A. P.-C.

**Protein Material Suitable for Coating Paper.** Charles N. Cone and Earl D. Brown assignors to Glidden Co. U. S. pat. 1,955,375 (April 17, 1934).—Oleaginous seed material such as ground soy-bean cake is extracted with a weakly alkaline solution and protein insoluble in lime water is eliminated and this insoluble protein is digested with caustic soda solution, and there is recovered from the weakly alkaline solution a special grade of protein, and a lower-grade protein is recovered from the caustic soda solution.—A. P.-C.

### Fillers

**The Influence of Aluminum Sulphate on the Retention of Kaolin by Paper.** Ya. G. Khinchin. Tzentral Nauch.-Issledovatel. Inst. Bumazhnoi Prom. Materialui (Trans. Central Sci. Research Inst. Paper Ind.) 1933, No. 1: 10-17; C. A. 28:6306.—Contrary to Roschier the increased retention of kaolin by paper on addition of aluminum sulphate is a result of a colloidal-chemical, and not a mechanical process, which furthers the retention of kaolin particles from colloidal to 5 mu size. The increased retention depends not only on the size of kaolin grains but also on the order of addition, hardness of water, hydrogen ion concentration of the medium and the adsorptive capacity of the fibrous material. Mechanically retained kaolin (large and partly small grains) does not affect the degree of sizing.—C. J. W.

**Ural (Mineral) Fillers for Paper Industry.** I. G. Kulev and M. V. Muretov. Materialui Vsesoyuz. Nauch.-Issledovatel. Inst. Bumazh. Tzellyuloz. Prom. (Trans. All-Union Sci. Research Inst. Paper Cellulose Ind.) 1932, No. 4:200-209; C. A. 28:5664.—Chemical composition of various clay, talc and gypsum deposits are discussed as a preliminary to a proposed study of their usefulness as fillers in the production of paper.—C. J. W.

**Fillers and Filling of Paper. Technological part.** N. Perekal'skii and N. Timesheva. Vsesoyuznuii Nauch.-Issledovatel. Inst. Bumazhnoi Tzellyuloznoi Prom. Materialui (Trans. All-Union Sci. Research Inst. Paper Cellulose Ind.) 1933, No. 1:81-128; C. A. 28:5981.—The various types of fillers and the existing theories and practice of filling paper are discussed. **Economical Part.** M. Ya. Marshak. *Ibid.* 128-142. The economic problem of substituting calcium carbonate and calcium sulphate for the inadequate domestic supply of talc in paper filling is discussed.—C. J. W.

**Increasing the Usefulness of Less Expensive Paper Fibers with Zinc Sulphide Pigments.** F. A. Steele. Paper Trade J. 99, No. 12: 105-106 (Sept. 20, 1934).—Zinc sulphide pigments as fillers are shown to be advantageously adapted for use in paper and boards made with less expensive fibers and are not confined to use in the finer paper field.—A. P.-C.

**Use of Titanium Pigments in Paper Making.** Maurice Déribéré. Papier 37: 741-746 (Aug., 1934).—A brief review of the occurrence of titanium and of the properties of titanium pigments, with a discussion of their suitability as paper fillers.—A. P.-C.

**The Choice of China Clay.** James Strachan. Paper Maker & Brit. Paper Trade J. 87, No. 3: TS65-66 (March, 1934).—A brief discussion of the factors to be taken into consideration in the selection of China clay for paper making.—A. P.-C.

### Adhesives

**Some Important Uses for Glue (from Leather Waste), Gelatin, Dextrin, Casein, Rubber, Balata, Latex, Revertex, Tar, Bitumen, Water Glass and Paraffin.** Carl Geils. Gelatine, Leim, Klebstoffe 1:58-61 (1933); C. A. 28:5981.—A discussion of the use of these adhesives in paper manufacture.—C. J. W.

**Lactarene or Casein as Adhesives in the Stained-Paper Industry.** Gottlieb Leschanowsky. Gelatine, Leim, Klebstoffe 1:126-130 (1933); C. A. 28:6306.—The preparation of staining colors is simpler with casein or lactarene (a casein preparation) than with leather glue. Vegetable glues play a very secondary role as binding materials for staining colors.—C. J. W.

### Pulp Purification

**Apparatus for Purifying Pulp Stock.** Sven C. Lindberg assignor to Centrifugal Engineering and Patents Corp. U. S. pat. 1,967,032 (July 17, 1934).—In a centrifugal pulp purifying machine, the rotating element consists of a pair of coaxial drums, one within the other. The stock is introduced at one end of the inner drum, flows along its inner wall and over an inwardly extending rim at the other end, whence it is flung against the wall of the outer drum and flows along the wall of this drum in a direction opposite to the flow in the inner drum.—A.P.-C.

**Treating Sulphite Pulp to Prevent Pitch Troubles on the Paper Machine.** Harold R. Murdock assignor to The Champion Fibre Company. U. S. pat. 1,968,345 (July 31, 1934).—Pine sulphite pulp is treated in aqueous suspension with an alkaline reagent for a sufficient period of time in an amount sufficient to dissolve and (or) disperse the resin in the pulp. The other ingredients of the furnish are added and the paper-making operation finished as usual.—A.P.-C.

**Process of Treating Paper Pulp.** Cotthard Rosen. U. S. pat. 1,968,223 (July 31, 1934).—Soda or sulphate pulp is rendered easy-bleaching by subjecting it successively to a very dilute alkaline washing, a washing in a very hot solution of an alkaline-earth base and chlorine water, and an acid washing (preferably with an acid giving soluble alkaline-earth salts).—A.P.-C.

**Mercerization and Purification of Cellulose Fibers.** Milton O. Schur and Benjamin G. Hoos assignors to Brown Co. U. S. pat. 1,968,468 (July 31, 1934).—Mercerization and purification are effected by treating in a single bath of caustic solution of a strength materially below about 18%, mercerization being obtained below ordinary room temperature (e.g., about 5° to 6°C.), and purification to eliminate non-alpha-cellulose constituents by raising the temperature to or above temperature.—A.P.-C.

**Process for Producing a Cellulose of High Alpha-Cellulose Content.** Alfons Bayerl assignor to I. G. Farbenindustrie Aktiengesellschaft. U. S. pat. 1,967,347 (July 24, 1934).—Pulp is treated by a chlorination process, then by a 5 to 10% caustic soda solution at atmospheric or higher temperature while simultaneously introducing chlorine gas into the mixture, preferably in such quantities that it is completely consumed. By varying the concentration of alkali and the temperature or duration of the treatment, cellulose of any desired viscosity may be obtained.—A.P.-C.

### Analytical and Testing Methods

**The Alkaline Number of Cellulose.** Landon. Mem. poudres 25:455-471 (1932-33); C. A. 28:5657.—A study of the relationships between the alkaline number (using 10 percent. potassium hydroxide or 7.14 percent. sodium

hydroxide), the copper number, the iodine number and the percentage of alpha-cellulose in celluloses of different origins. It is concluded that, within limits, the alkaline and copper numbers are proportional to the amount of alpha-cellulose present. The determination of the alkaline number is more exact than that of the alpha-cellulose. High viscosity cottons with long cellulose chains have a low alkaline number and vice versa for low viscosity cottons. The copper number is very variable and, with degraded celluloses, the results are not in agreement with the alkaline number. The iodine number in comparison with the alkaline or copper numbers gives valuable information as to the treatment the cellulose has received.—C. J. W.

**Standardization of the Methods of Control and Determination (of Pulp and Paper).** Determination of alpha-cellulose. Frantz Khyuter. Vsesoyuznuii Nauch.-Issledovatel. Inst. Bumazhnoi Tzellyuloznoi Prom. Materialui (Trans. All-Union Sci. Research Inst. Paper Cellulose Ind.) 1933, No. 1:174-86; C. A. 28:5978.—Various methods of determination of alpha-cellulose and combined beta and gamma-cellulose are compared. A method used at Waldhoff works, Germany (*Papierfabr.* 23:702, 705 (1925); 26:82 (1928) is considered more reliable.—C. J. W.

**A Simple Titration Method for the Determination of the Copper Number of Cellulose Materials.** D. Kruger and E. Tschirch. Zellstoff u. Papier 14, No. 6:233-35 (June, 1934).—The method consists in decomposing the acidified copper solution with potassium sulfocyanate and a little potassium iodide and then titrate with sodium thiosulphate solution to the disappearance of the blue starch iodide color, using the starch as indicator. Its advantages over other methods are given and an example with calculations.—J. F. O.

**Photochemical Reactions of Cellulose. I. The Effect of Light on the Copper Number of Cellulose (Filter Paper).** Sutezo Oguri. J. Soc. Chem. Ind. Japan 37 (Suppl. Binding): 201-202 (1934).—Filter papers were exposed to sunlight and to the light of mercury-vapor lamps, and the formation of oxycellulose was determined by means of the copper number. The copper number of filter paper for quantitative analyses is higher than that of paper for qualitative analysis. The copper number of filter paper increases under the action of light of the mercury-vapor lamp, and the effect is more pronounced on quantitative paper, which therefore is more oxidizable than qualitative paper. The presence of water and caustic soda solution retards the oxidation of the cellulose. Sunlight also causes increases in copper number even with comparatively short exposures.—A.P.-C.

**Determination of the Furfural Number of Pulp.** Helga Aspelund and F. W. Klingstedt. Finnish Paper and Timber J. 1933: 682-684; Chimie Et Industrie 32:161 (July, 1934).—The colorimetric xylidine method is described. The results are in very good agreement with those obtained by the gravimetric method when precipitation is carried out after distillation.—A.P.-C.

**Alkaline Bleach Demand Test for Sulphite.** Hans John and Fred W. Poppe. Paper Trade J. 99, No. 9:36-37 (Aug. 30, 1934).—A detailed description is given of the technic of a method for determining the bleach demand of sulphite pulp. The method is suitable for mill, laboratory or research purposes, and gives remarkably close agreement by different operators in different mills.—A.P.-C.

**Determination of Lignin as a Method for Measuring the Degree of Cooking in Pulp Digestion.** John Hendrickson and H. K. Benson. Pacific Pulp Paper Ind. 8, No. 3:10-12 (March, 1934).—The Noll method of lignin determination (*Zellstoff u. Papier* 11, 409-411 (1931)) is proposed for the control testing in the sulphite pulping process.—A.P.-C.

**Freeness of Finished Paper as an Aid in Machine Control.** Uno G. Fryklund and C. R. P. Cash. Pacific Pulp Paper Ind. 8, No. 6:3-4 (June, 1934); Paper Mill 57, No. 27:2 (July 7, 1934).—Owing to the difficulty of obtaining accurate freeness measurement with sufficient rapidity to be useful in controlling paper machine operation, the possibility of determining on a weighed amount of finished paper after disintegrating was investigated. With a suitable disintegrator, good duplication can be obtained by taking the following precautions: defiber with a minimum of beating or cutting action and in a short time (not exceeding 5 minutes); the slowing of the stock due to whipping by the disintegrator must be constant for any one grade of paper. Results obtained to date indicate that the freeness of the finished paper is a measure of the slowing of the stock due to shortening of the fibers rather than by hydration.—A.P.-C.

**Transparency Meter.** Maynard D. McFarlane. U. S. pat. 1,967,583 (July 24, 1934).—The invention comprises primarily a construction including a source of light (preferably electric), a photoelectric cell connected with a reading meter, and a standard of transparency (preferably a sheet of opalescent glass which may be calibrated against clear light by adjusting the distance between the photoelectric cell and the source of light to obtain a standard reading of 10% on the meter) against which the readings may be continually calibrated while the instrument is in use to obviate any changes which may occur either in the source of light or the cell.—A.P.-C.

**Freeness Tester.** Arthur R. Harvey assignor to The Gardner-Richardson Co. U. S. pat. 1,970,521 (Aug. 14, 1934).—The invention consists in continuously drawing off stock from a suitable point (*e.g.*, the paper machine head box) and passing it through an apparatus which is controlled electrically to automatically carry out a freeness determination and record the result. The testing operation is carried out in a sequence of related steps and the apparatus is constructed so that the cycle may be continuously repeated.—A.P.-C.

**A Photo-Electric Gloss Meter.** G. L. Riddell. World's Paper Trade Rev. 101:1480-1484 (May 11, 1934).—A description of the construction, operation and theory of an experimental polarization gloss meter in which light intensities are measured photo-electrically instead of visually.—A.P.-C.

**Ultra-Violet Analytic Lamp.** G. S. Ogden. World's Paper Trade Rev. 101:1701 (May 25, 1934).—A brief description of the British Hanovia Quartz Lamp Co.'s Rubner table model lamp for making fluorescence tests.—A.P.-C.

**Pulpfrich Photometer.** J. H. Chivers. World's Paper Trade Rev. 101:1528,1530 (May 11, 1934).—A brief description of the Pulpfrich photometer and of its use for measuring the gloss of paper.—A.P.-C.

**Paper Stretch Recorder.** R. Harrison. World's Paper Trade Rev. 101:1698 (May 25, 1934).—A brief description of the Negretti and Zambra stretch recorder for recording the alteration in length of a sample strip of paper over which conditioned air of varying humidities is passed.—A.P.-C.

**M. I. T. Folding Tester.** A. H. Evans. World's Paper Trade Rev. 101:1325 (April 27, 1934).—A brief description of the instrument.—A.P.-C.

## New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has announced the following elections to membership:

Fred B. Attwood, chief chemist, Ogden Division, Container Corporation of America, Chicago, Ill., is a 1931 graduate chemical engineer of Armour Institute of Technology and was formerly chemist for the Sanitary District of Chicago and assistant to the president of the International Filter Company.

Knut S. A. R. Amberg, chemist, Kangas Pappersbruks A/B, Jyvaskyla, Finland, is a 1930 graduate of the Technical University of Helsingfors and was formerly chemist for Nokia A. B. Finland and worked in a number of mills in the United States and Canada.

Walter Brecht, director of the Institute of Paper Making, Technical University of Darmstadt, Germany, received his doctor's degree from Darmstadt in 1925. He studied paper making at the Hammermill Paper Company, Erie, Pa., and was formerly technical manager of G. Hainsthchn Paper Company, Augsbur, Germany.

William E. Beazley, checker, International Paper Company, Palmer, N. Y., is a 1934 graduate of the University of Maine.

Louis R. Benjamin, technical advisor, Derwent Valley Paper Company, Ltd., Hobart, Tasmania, Australia, is a 1912 graduate of the Technical College and School of Mines of Western Australia. He was formerly in charge of the Pulp and Paper Division of the Australian Commonwealth Government Research Council, technical superintendent, Tasmania Paper, Ltd., and superintendent of technical control, Australia Paper Manufacture, Ltd., Melbourne.

Martin Breuer, division manager, Organiz Chemical Department, E. I. du Pont de Nemours & Co., San Francisco, Cal., is a 1902 graduate of the College of Elberfeld, Germany.

Bernard E. Burr, chemist, Eaton-Dikeman Company, Mt. Holly Springs, Pa., is a 1928 graduate of Dickinson College.

Richard V. Does, chemical engineer in charge of development work on paper coatings, American Sealcone Corporation, Brooklyn, N. Y., is a 1929 graduate of the Massachusetts Institute of Technology and was formerly in charge of development for the Stix-Tile Company (latex adhesives).

William L. Egy, engineer-physicist, W. & L. E. Gurley, Troy, N. Y., is a 1907 graduate electrical engineer and physicist of the University of Illinois and was formerly physicist for the Underwriters Laboratory, Chicago, and the U. S. Bureau of Mines, Pittsburgh.

Ole M. Halse, chief chemist, Swedish Pulp Company, Ostrand, Sweden, received his doctor's degree from the University of Oslo, Norway, in 1918 and was formerly with the Uion Company, Skien, Norway.

Philip L. Hamer, chemist, Berst-Forster-Dixfield Company, Plattsburg, N. Y., is a 1930 graduate of the New York State College of Forestry, Syracuse, N. Y., and was formerly with the Oswego Falls Corporation, Fulton, N. Y., and the Cherry River Paper Company, Richwood, W. Va.

Harold Ainsworth Harrison, chief chemist, Cooke & Nuttall, Ltd., Horwich, Lancs, England, is a 1922 graduate of Victoria University, Manchester, England, from which he also received his doctorate degree. He was formerly research chemist for the British Government and is chairman of the Fastness to Light Committee, vice-chairman of the Pulp Evaluation Committee of the Technical Section, Papermakers Association of Great Britain and Ireland.

John C. Hitchmann, chemical engineer, E. B. Eddy Company, Ltd., Hull, P. Q., is a 1934 graduate of the University of Toronto.

Per Gunnar Hultman, managing director of the Pappersmasseforbundet and secretary of the Svenska Papers- och Celluloseingenjorsforeningen, Stockholm, Sweden, is a 1911 graduate of the University of Upsala and was formerly permanent secretary of the Swedish Ministry of Commerce.

John T. Khramtzoff, chief engineer, Central Paper Trust, Moscow, U. S. S. R., is a 1908 graduate of the Institute of Technology, Leningrad, Russia, and has been engineer for the Kossingskaja Paper Mill, Pautshenko Paper Mill, Sokol-Sukhona Pulp and Paper and the Volga Paper Mills.

Vincent E. Lysaght, testing engineer, Wilson Mechanical Instrument Company, New York, is a 1924 graduate of the Massachusetts Institute of Technology and was formerly testing engineer for the New York Edison Company.

Alan R. Lukens, director of research, Thompson Weinman & Co., Cambridge, Mass. is a graduate of the Pratt Institute, Brooklyn, N. Y. and Columbia University, and was formerly chief chemist of the Baltimore Roofing and Asbestos Company, Asbestos, Md.; chemical director of the Richardson Company, Lockland, Ohio, and technical manager of the Hood Rubber Company, Watertown, Mass.

George S. Meddis, sales representative, the Orr Felt and Blanket Company and Simmonds Worden White Company, San Francisco, Cal., is a 1901 graduate mechanical engineer of Purdue University.

Walter B. Morehouse, chemist, Lawless Brothers Paper Mills, Inc., East Rochester, N. Y. is a 1934 graduate of the New York State College of Forestry, Syracuse, N. Y.

M. Howard Morley, Thames Board Mills, Manchester, England, and until recently, manager of the Book and Bond Division, International Paper Company, New York, N. Y., is a 1907 graduate of University College, London, England, and was formerly chemist and assayer for Johnson & Sons, London, and assistant superintendent Telluride Reducing Company, Colorado Springs, Colo.

F. H. Rosencrans, advisory engineer, Combustion Engineering Company, New York, N. Y., is a 1911 graduate mechanical engineer of the University of Nebraska, and was formerly engineer for the Texas Power and Light Company and the Electric Bond and Share Company.

John L. Sommerville, superintendent of research, Derwent Valley Paper Company, Ltd., Hobart, Tasmania, Australia, is a 1928 graduate of the University of Western Australia, and was formerly senior cellulose chemist of the Australian Commonwealth Government, Research Council, Melbourne; research chemist, A. E. Reed and Company, Ltd., Kent, England, and chief chemist, London Paper Mills, Kent, England.

John Schuber, a technical director, St. Regis Paper Company, Deferiet, N. Y. is a graduate of Rensselaer Polytechnic Institute and was formerly research chemist of the Champion Fibre Company, Canton, N. C.

Bernard J. Staneslow, research chemist, Moore Research and Service Corporation, Niagara Falls, N. Y., is a 1931 graduate of Cornell University and was formerly chemist for the Agfa-Ansco Film Corporation, Binghamton, N. Y. and the J. T. Baker Chemical Company, Phillipsburg, N. J.

John L. Traub, Yonkers, N. Y. is a 1928 graduate of the

*(Continued on page 49)*

# Obituary

### David Minott Anderson

WATERTOWN, N. Y., February 11, 1935—David Minott Anderson, one of the organizers of the St. Regis Paper Company, died yesterday at the La Jolla Hospital, in La Jolla, Cal., according to word received at his home here. Mr. Anderson, who had been operated on for appendicitis five days ago, was seventy-nine years old.

After being graduated from Brooklyn Polytechnic High School, Mr. Anderson became a tinware salesman and came to Watertown in 1884, where he was a partner in the operation of a fleet of tinware trucks in northern and central New York. Several years later he joined the Ontario Paper Company and in 1889 he became general manager of the Taggart Company in Watertown.

In 1900 he was among the organizers of the St. Regis Paper Company, which was later sold to G. H. P. Gould, of Lyons Falls. He sold it to a syndicate headed by Floyd L. Carlisle, and Mr. Anderson, one of the members of the syndicate, became vice-president and a director of the company. He retired in 1914.

He was born in Harrison, Westchester County, a son of Mr. and Mrs. David Minott Anderson. His wife, Mrs. Ida Lydecker Anderson, died January 11, 1931.

Mr. Anderson was a former director of the St. Regis Paper Company of Canada, the St. Regis Falls Wood Corporation, the Northern New York Trust Company, Northern New York Utilities, Inc., Empire Petroleum Products Corporation, the Agricultural Insurance Company, Norwook and St. Lawrence Railroad, Hungerford-Holbrook Company, Central Stamping Company of New York, and the Ontario Stock Farm.

He was a trustee of the Jefferson County Savings Bank and a director of the Jefferson County Historical Society. He was a member of the Black River Valley and the Thousand Islands Country Clubs. His home was at 210 South Massey Street here.

Surviving are a daughter, Mrs. Elizabeth A. Wise, of Watertown, who is in La Jolla, and two grandchildren, Henry A. Wise and Elizabeth A. Graham, of Scarsdale, N. Y.

### Roscoe G. Marshall

ADAMS, Mass., February 11, 1935—Roscoe G. Marshall, native of Schuylerville, whose sudden death occurred last week at his home in this city, had been prominently identified with the paper manufacturing industry here for seventeen years. He had been confined to his home for the past month but his condition had not been regarded as critical until a few hours before his death.

For the past seven years Mr. Marshall had been superintendent of the finishing department of the L. L. Brown Paper Company and prior to that had been associated in similar capacity with the former Berkshire Hills Paper Company. He went to Adams after having held positions of responsibility in paper mills in various centers of New York, New England and Canada.

He moved to Adams from Thorold to become superintendent of the finishing department in the former Berkshire Hills mill. During his residence there he took keen interest in the life of the community and lent his support to many movements for community betterment.

His career in the paper mills of Adams had been marked by devotion to his duties and the efficient manner in which he discharged them; by the kind and thoughtful manner in which he dealt with the employees of his department, and by the friendly relations that have always existed between him and other mill officials.

Mr. Marshall was a member and official of the First Methodist Episcopal Church at North Adams and was affiliated with the Berkshire Lodge of Masons.

He is survived by his wife, Mrs. Grace D. Marshall; one daughter, Miss Katherine L. Marshall of Adams, and three sons, Attorney O. Dixon Marshall, of Williamstown; Dr. Robert L. Marshall, Vandalia, Mo., and Roscoe W. Marshall, student at Cornell University; a half sister, Mrs. Lewis Atherton of Jackson, Mich., and one grandchild, Beverly Joan, daughter of Dr. and Mrs. Robert L. Marshall.

### William H. Claflin

BOSTON, Mass., February 11, 1935—William H. Claflin, 81, founder and former treasurer of W. H. Claflin & Co., Inc., died February 3 at his summer residence, Little's Point, Swampscott.

Mr. Claflin was born in Boston in 1854, the son of William H. and Eleanor (Pearson) Claflin. In 1876 he and a Mr. Brown formed the firm of Claflin & Brown, to deal in paper, with office in the basement in a building at the corner of Franklin and Federal streets. In 1885 the concern removed to a basement of the Rich building, corner of Franklin and Devonshire streets.

About this time, Mr. Brown retired. The firm then became William H. Claflin & Co. Later the firm removed to 180 Congress street and in 1903 to 562 Atlantic avenue. It was then incorporated as W. H. Claflin & Co., Inc. with a capital stock of $100,000. In 1911, the business was removed to 340 Summer street.

Mr. Claflin retired from the business some ten years ago.

### Millins O. Wood

PIERCEFIELD, N. Y., February 11, 1935—Millins O. Wood, for many years a prominent figure in paper mill circles of Northern New York, died this week following a brief illness. He was 66 years old. Following a civil engineering course at Union College he became connected with the International Paper Company, and for some time was resident engineer of the Otic Maine mill. In 1913, he was promoted to the Piercefield mill, which at that time was in poor condition. Through his efforts improvement was effected and he was made general manager. He was connected with the company for thirty years and a portion of that time as plant manager. During his reign extensive improvements were made to the mill here and the plant was operated on a profitable basis. The disastrous strike of 1921 which disorganized the whole company system affected the mill in this village very little. He severed connections in 1925 and returned to his home in Herkimer where he became prominent in civic affairs. His wife and two nephews are the principal survivors.

### Mrs. E. W. Campbell

DEXTER, N. Y., February 11, 1935—Word reached here this week of the death in New York City of Mrs. E. W. Campbell, a director of the Dexter Sulphite, Pulp and Paper Company and widow of the late Charles E. Campbell, prominent paper manufacturer. Mrs. Campbell was made a director when the company was recently reorganized. She was subject to heart disease and had been seriously ill for several months. A son, Dr. James E. Campbell, president of the company, died of a similar ailment in 1933, and another son, Clarence W. Campbell, vice president and general manager, died suddenly in 1931.

# IMPORTS OF PAPER AND PAPER STOCK

## NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

### NEW YORK IMPORTS

WEEK ENDING FEBRUARY 9, 1935

CIGARETTE PAPER

De Manduit Paper Corp., Pr. Harding, Havre, 1cs.; Champagne Paper Corp., Pr. Harding, Havre, 520 cs.; Standard Products Corp., Ile de France, Havre, 49 cs.; De Manduit Paper Corp., Washington, Havre, 94 cs.

WALL PAPER

F. J. Emmerich, Georgic, Liverpool, 4 bls.; F. J. Emmerich, Bremen, Bremen, 5 bls.; F. J. Emmerich, A. Ballin, Hamburg, 7 bls.; ———, A. Ballin, Bremen, 1 ble., 1 cs.; ——, Pr. Harding, Havre, 3 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., A. Banker, London 5 bls., 1 cs.

NEWSPRINT

H. Reeve Angel & Co. Inc., Scanstates, Kotka, 217 rolls, 7 bls.; Lunham & Reeve Inc., Scanstates, Kotka, 220 rolls; Jay Madden Corp., Scanstates, Kotka, 1387 rolls; ———, Washington, Hamburg, 144 rolls; Jay Madden Corp., A. Ballin, Bremen, 134 rolls; Perkins Goodwin & Co., A. Ballin, Hamburg, 521 rolls.

PRINTING PAPER

Gondrand Shipping Co., Sagoporack, Gefle, 123 rolls; ———, A. Banker, London, 29 rolls, 4 cs.; C. Bruning & Co., Estrella, Marseilles, 20 cs.; E. Dietzgen & Co., Estrella, Marseilles, 7 cs.; International F't'g' Co., Astrida, Antwerp, 2 rolls.; Steiner Paper Corp., A. Ballin, Hamburg, 42 cs.

WRAPPING PAPER

Van Oppen & Co., Excambion, Genoa, 25 cs.

KRAFT PAPER

Walker Goulard Plehn Co. Inc., Pr. Harding, Hamburg, 1196 rolls; Walker Goulard Plehn Co. Inc., Pr. Harding, Hamburg, 574 rolls.

PACKING PAPER

Chas. Happel, Black Gull, Rotterdam, 4 cs.; Irving Trust Co., A. Ballin, Hamburg, 12 cs.

DRAWING PAPER

H. Reeve Angel & Co. Inc., Antonia, Southampton, 1 cs.

FILTER PAPER

H. Reeve Angel & Co. Inc., Antonia, Southampton 8 cs.; A. Giese & Son, Black Gull, Rotterdam, 8 cs.; A. W. Fenton Inc., A. Ballin, Bremen, 100 bls.; Mager Bros., A. Ballin, Hamburg, 75 bls.

FILTER MASSE

———, A. Ballin, Hamburg, 10 cs.

SURFACE COATED PAPERS

Globe Shipping Co., Bremen, Bremen, 30 crates, 6 cs.; Chas. Happel, Washington, Hamburg, 7 cs.

BASIC PAPER

Globe Shipping Co., A. Ballin, Bremen, 20 crates; Irving Trust Co., A. Ballin, Bremen, 8 cs. 15 crates.

METAL COATED PAPER

K. Pauli Co., A. Ballin, Bremen, 19 cs.

COATED PAPER

Chas. Happel, A. Ballin, Hamburg, 1 cs.

PHOTO PAPER

J. J. Gavin, Olympic, Southampton, 7 cs.

PARCHMENT PAPER

Vulcan Yeast Co., A. Ballin, Hamburg, 1 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Georgic, Liverpool, 31 cs. (duplex); B. F. Drakenfeld & Co., Georgic, Liverpool, 1 cs. (simplex).

DECALCOMANIAS

Sellers Transportation Co., Bremen, Bremen, 24 cs.; P. A. Consmiller, Bremen, Bremen, 9 cs.

TISSUE PAPER

F. C. Strype, Georgic, Liverpool, 1 cs.; Jay Madden Corp., A. Ballin, Hamburg, 95 bbls.

COLORED PAPER

International F'd'g Co., A. Ballin, Hamburg, 6cs.

STENCIL PAPER

Chas. Happel, Astrida, Antwerp, 6 cs.

PASTE BOARD

Phoenix Shipping Co., Pr. Harding, Hamburg, 40 bls.; Fibre Products Manfg. Co., Pr. Harding, Hamburg 10 bls.; Phoenix Shipping Co., Washington, Hamburg, 31 bls.

CARD BOARD

American Express Co., A. Ballin, Hamburg, 10 bls.

MISCELLANEOUS PAPER

Coty Processing Co., Ile de France, Havre, 3 cs.; E. Fougera & Co., Ile de France, Havre, 47 cs.; Keller Dorian Paper Co., Excambion Marseilles 3 cs.; Keuffel & Esser Co., Washington, Hamburg, 49 cs., 39 rolls; H. Reeve Angel & Co. Inc., Soyo Maru, Yokohama, 7 cs.

RAGS, BAGGING, ETC.

Philadelphia Nat'l. Bank, Tricolor, Kobe, 125 bls. cotton waste; ———, A. Banker, London, 43 bls. rags; ———, Estrella, Barcelona, 190 bls. rags; S. Birkenstein & Son, Estrella, Barcelona, 151 bls. old cottons; E. J. Keller

Co. Inc., Estrella, ———, 371 bls. rags; E. J. Keller Co. Inc., Excambion, ———, 344 bls. rags; Manufacturers Trust Co., A. Ballin, Hamburg, 533 bls. cotton waste; Philadelphia Nat'l. Bank, A. Ballin, Hamburg, 300 bls. cotton waste; E. J. Keller Co. Inc., Schodack, ———, 187 bls. paper stock.

OLD ROPE

Banco Com'l Italiane Trust Co., Estrella, Barcelona, 39 bls.; Banco Com'l Italiane Trust Co., Antonia, London 60 bls.

CHINA CLAY

English China Clay Sales Corp., Georgic, Liverpool, 140 bags.

WOOD PULP

Bulkley Dunton & Co., Sagoporack, ———, 1500 bls. wood pulp 304 tons; Price & Pierce, Ltd., Sagoporack, Wallvik, 4200 bls. sulphite 700 tons; Price & Pierce, Ltd., Sagoporack, Wallvik, 250 bls. mechanical pulp 50 tons; Stora Kopparberg Corp., Sagoporack, Skutskar, 940 bls. dry pulp 190 tons; Pagel Horton & Co. Inc., Sagoporack, Gefle, 500 bls. sulphite 101 tons; Pagel Horton & Co., Inc., Sagoporack, Gefle, 975 bls. sulphate 198 tons; M. Sone, Sagoporack, Helsingfors, 300 bls. dry pulp 50 tons; Lagerloef Trading Co., Sagoporack, Helsingfors, 390 bls. wood pulp 78 tons; Lagerloef Trading Co., Scanstates, Kotka, 4491 bls. sulphite 787 tons; Lagerloef Trading Co., Scanstates, Kotka, 840 bls. sulphate 168 tons; Castle & Overton, Inc., Scanstates, Kotka, 388 bls, sulphite 77 tons; Castle & Overton, Inc., Black Gull, Rotterdam, 1152 bls. wood pulp 200 tons; E. J. Keller Co. Inc., Washington, ———, 325 bls. wood pulp 52 tons; Perkins Goodwin & Co., Washington, Hamburg, 200 bls. wood pulp 30 tons; Bank of N. Y. Trust Co., A. Ballin, Hamburg, 1080 bls. wood pulp 216 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Scanstates, Kotka, 47 bls. 6 tons; Johaneson Wales & Sparre, Inc., Scanstates, Kotka, 314 rolls 72 tons.

## BOSTON IMPORTS

WEEK ENDING FEBRUARY 9, 1935

———, Georgic, Liverpool, 298 bags hide cuttings; G. F. Malcolm Inc., Georgic, Liverpool, 4 cs. tissue paper; T. D. Downing & Co., A. Banker, London, 154 bls. waste paper; Crocker Burbank Co., A. Banker, London, 165 bls. waste paper; Brown Bros. Harriman & Co., A. Banker, London, 71 coils old rope.

## NEW LONDON IMPORTS

WEEK ENDING FEBRUARY, 9, 1935

Gottesman & Co. Inc., Sagoporack, Iggesund, 3000 bls. sulphite 600 tons; Pagel Horton & Co. Inc., Sagoporack, Gefle, 2500 bls. sulphite 508 tons; ———, Sagoporack, Gefle, 147 bls. sulphate 31 tons.

## PHILADELPHIA IMPORTS

WEEK ENDING FEBRUARY 9, 1935

Philadelphia Nat'l Bank, Tricolor, Kobe, 200 bls. cotton waste; J. W. Hampton, Jr. Inc., Boschdyk, Rotterdam, 53 tons china clay; Price and Pierce, Ltd., Sagoporack, Wallvik, 900 bls. sulphite 150 tons; Stora Kopparberg Corp., Sagoporack, Skutskar, 800 bls. dry pulp 164 tons; Lagerloef Trading Co., Sagoporack, Helsingfors, 390 bls. ground pulp 78 tons; Castle & Overton, Inc., Scanstates, Kotka, 1123 bls. sulphite 222 tons; Lagerloef Trading Co., Scanstates, Kotka, 2586 bls. sulphate 449 tons; Lagerloef Trading Co., Scanstates, Kotka, 762 bls. sulphite 139 tons; Lagerloef Trading Co., Scanstates, Kotka, 787 bls. wood pulp boards; H. Reeve Angel & Co. Inc., Scanstates, Kotka, 75 rolls newsprint; J. W. Hampton Jr. Inc., Scanstates, Kotka, 71 rolls newsprint; Paper House of Pennsylvania, Scanstates, Kotka, 192 bls. newsprint; Bulkley Dunton & Co., Wido, ———, 675 bls. wood pulp.

## CAMDEN IMPORTS

WEEK ENDING FEBRUARY 9, 1935

Bulkley Dunton & Co., Gonzenheim, ———, 7350 bls. wood pulp.

## BALTIMORE IMPORTS

WEEK ENDING FEBRUARY 9, 1935

Castle & Overton, Inc., Boschdyk, Rotterdam, 320 bls. wood pulp; ———, Boschdyk, Rotterdam, 216 bls. wood pulp; National City Bank, Boschdyk, Rotterdam, 134 bls. rags; M. Sone, C. of Norfolk, Hamburg, 500 bls. wood pulp; Bulkley Dunton & Co., Heddernheim, ———, 3375 bls. wood pulp; Bulkley Dunton & Co., Kersten Miles, ———, 4125 bls. wood pulp.

## NORFOLK IMPORTS

WEEK ENDING FEBRUARY 9, 1935

R. J. Reynolds Tobacco Co., Boschdyk, Rotterdam, 1170 cases cigarette paper.

## To Proceed with Appraisement Reports

WASHINGTON, D. C., February 13, 1935—The Secretary of the Treasury has authorized appraising officers to proceed with their appraisement reports covering standard newsprint paper from Canada without regard to any question of dumping. It may be recalled that this dumping case was filed with the Customs Bureau a long time ago. In officially notifying customs officers of this change, T. J. Coolidge, Acting Secretary of the Treasury says:

"Reference is made to the several notices of suspected dumping issued by various appraising officers of the Customs Service under the provisions of the Antidumping Act 1921, covering importations of standard newsprint paper from Canada.

"Appraising officers who have been withholding appraisements of standard newsprint paper from Canada, by virtue of the issuance of notices of suspected dumping issued prior to this date, are authorized to make their appraisements reports without regard to any question of dumping."

## T. A. Flockhart Goes to Springfield

T. A. Flockhart's many friends in the paper and box covering industry will be pleased to learn of his election as vice-president of the Holyoke Card and Paper Company of Springfield, Mass. Mr. Flockhart was president and treasurer of the Roto Engraving and Printing Company of Bound Brook, N. J., until it was taken over by the former company last August.

All of the equipment of Mr. Flockhart's former company has been moved to Springfield and has been in operation for some months producing all of Roto's regular lines as well as producing decorated photo mounts, decorated papeterie paper, decorated greeting card paper and decorated cover paper in connection with Holyoke Card and Paper Company's equipment.

## New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, February 13, 1935.

Conditions in the local paper market are practically unchanged. Demand for the various grades of paper is holding up well and the outlook for the immediate future is promising. Sales forces of the local paper houses are conducting an active campaign for new business. Prices are generally steady to firm.

The newsprint paper market continues rather involved, due to the unsettled price situation. Demand from the newspaper publishers is fairly persistent, however, and advertising volume is ahead of the corresponding period of a year ago. Stocks at the mills are not excessive for the time of year.

Steadiness prevails in the fine paper market. The book paper section, in particular, is exhibiting a strong undertone. Prices remain firm, in most instances. Tissues are moving freely. The coarse paper market is moderately active and kraft specialties continue in good request. Business in the paper board market is improving.

### Mechanical Pulp

The ground wood pulp market is marking time. Manufacturing operations are being maintained in sufficient volume to take care of current requirements and there are no undue accumulations. Quotations on mechanical pulp are generally holding to former levels and reports of concessions are infrequent.

### Chemical Pulp

Trading in the chemical pulp market is more active than of late. Both domestic and imported grades are showing greater strength and there is talk of higher prices around. Kraft pulp is particularly firm, with offerings limited. Foreign and domestic bleached sulphite are in better request, at steady prices.

### Old Rope and Bagging

The old rope market is rather quiet. Demand for domestic and imported old manila rope is listless. Small mixed rope is moving slowly. Old rope prices, however, are fairly steady. The bagging market continues to improve. Gunny bagging is quite firm and scrap bagging is steady. Roofing bagging is in seasonal request.

### Rags

Paper mill interest in the domestic rag market is more in evidence. Demand for new cotton rags is brisk. No. 1 white shirt cuttings are in persistent request, both here and abroad. Roofing grades are decidedly firmer. The foreign rag market is sharing the general improvement. Offerings of some imported grades are restricted.

### Waste Paper

The paper stock market is steadier than of late. Board mill demand for the lower grades is better and the price situation is showing signs of clearing. The higher grades of waste paper are holding up well. Hard white envelope cuttings and hard and soft white shavings are steady. Book stock is moderately active.

### Twine

Business in the local twine market is moderately active. Demand for the various varieties of twine is mainly routine. With the approach of the Easter holidays, however, trading should become more lively. Despite the usual keen competition for desirable orders, prices are generally holding to formerly quoted levels.

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## NEW TAPPI MEMBERS

*(Continued from page 45)*

New York State College of Forestry, Syracuse, N. Y., and was formerly with the Scott Paper Company, Chester, Pa. the Western Electric Company, Kearny, N. J. and Baker, Bullock & Sanderson, Winegar, Wis.

Eldred E. Tweed, chemist, Mead Paperboard Corporation, Nashville, Tenn., attended Ohio Wesleyan University, and was formerly with the Billiter-Oliver Construction Company, Cincinnati, Ohio, and the Mead Corporation, Chillicothe, Ohio.

S. R. Valentine, Jr., chemist, Lee Paper Company, Vicksburg, Mich., is a 1931 graduate of the University of Michigan.

H. Edmund Wiedermann, consulting chemist, St. Louis, Mo., is a 1903 graduate chemical engineer of the Rose Polytechnic Institute.

Frederick Wierk, Johnson & Wierk, Inc., New York, has been elected to active membership in the Technical Association. Mr. Wierk is chairman of the TAPPI Equipment Committee and was formerly engineer for S. K. F. Industries, Inc. and Karl A. Lefren, Inc., consulting engineers.

Samuel J. Wineburgh, chemist, International Paper Company, is a 1934 graduate of the New York State College of Forestry.

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## Holyoke Wants Paper Converters

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., February 13, 1935—The Holyoke Water Power Company has joined hands with the Holyoke Chamber of Commerce in a campaign to secure new industries for Holyoke. New paper mills are not likely to be secured; but there are hopes of securing some paper converters in the near future.

Low taxes, excellent shipping facilities, water and electric power at low rates, and a community eager to welcome new industries are high points in the campaign. Robert E. Barrett, Jr., son of the president of the Holyoke Water Power Company has compiled a booklet setting forth the advantages of Holyoke for a manufacturing site which has been sent out to several hundred executives in New England.

# Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, February 13, 1935.

BLANC FIXE.—Steadiness prevails in the blanc fixe market. Prices are generally holding to formerly quoted levels. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market is moderately active. Shipments against contract are moving in fairly satisfactory volume for the time of year. Prices remain unchanged. Bleaching powder is quoted at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market is very firm. Domestic standard ground is quoted at 11½ and finely ground at 12 cents per pound; while Argentine standard ground is offered at 13½ and finely ground at 14 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Conditions in the caustic soda market are satisfactory. While demand is irregular, prices are steady. Solid caustic soda is still quoted at from $2.60 to $3.10; while the flake and ground are selling at from $3 to $3.05 per 100 pounds, in drums, at works.

CHINA CLAY.—The position of the china clay market is unchanged. Contract shipments are moving regularly. Imported china clay is quoted at from $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at from $6.50 to $12 per ton, at works.

CHLORINE.—Trading in the chlorine market is fairly active. More lively demand is anticipated in the near future. Prices are steady. Chlorine is quoted at from $2 to $2.40 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is steadier. Paper making gum rosin is quoted at $4.70 and FF wood rosin at $4.60 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $2.66 per 100 pounds, in tank cars, at works.

SALT CAKE.—Demand for salt cake is fairly persistent. Prices are holding to schedule. Salt cake is quoted at from $12 to $13 and chrome salt cake at from $11 to $12 per ton, at works. Imported salt cake is selling at from $12 to $13 per ton, on dock.

SODA ASH.—The soda ash market is marking time. The outlook for the future, however, is promising. Prices are steady. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.10; in bags, $1.40; and in barrels, $1.50.

STARCH.—Paper mill demand for starch is fairly active. The contract movement is well up to average. Prices remain unchanged. Special paper making starch is quoted at $3.75 per 100 pounds, in bags; and at $3.84 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is displaying strength. Prices are holding to schedule. Commercial grades are quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is steady. Sulphur is quoted at $18 per long ton on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—No radical changes have transpired in the talc market. Prices are holding to previously quoted levels. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

# Market Quotations

## Paper

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ledgers | 6.50 | @ | — |
| Bonds | 6.00 | @ | — |
| Index | 6.00 | @ | — |
| Writings— | | | |
| Extra Superfine | 6.50 | @ | — |
| Superfine | 6.25 | @ | — |
| Tub sized | 5.75 | @ | — |
| Engine sized | 5.50 | @ | — |
| Book, Cased— | | | |
| S. & S. C. | 5.35 | @ | 5.75 |
| S. & S. C. Litho. | 5.60 | @ | 6.00 |
| M. F. | 5.10 | @ | 5.50 |
| Coated and Enamel | 5.90 | @ | 6.55 |
| Coated Litho | 5.90 | @ | 6.55 |
| Tissues—Per Ream— | | | |
| White No. 1 | .82½ | @ | .85 |
| White No. 2 | .67½ | @ | — |
| Anti-Tarnish M. G. only | 1.00 | @ | — |
| Colored | .85 | @ | — |
| Kraft | .70 | @ | — |
| Manila | .67½ | @ | .70 |
| Manila— | | | |
| No. 1 Jute | 9.00 | @ | 9.25 |
| No. 2 Jute | 7.75 | @ | 8.50 |
| No. 1 Wood | 4.00 | @ | 5.25 |
| No. 2 Wood | 3.50 | @ | 4.00 |
| Butchers | 4.00 | @ | 4.50 |
| Fibre Papers— | | | |
| No. 1 Fibre | 4.25 | @ | 5.50 |
| No. 2 Fibre | 4.00 | @ | 4.75 |
| Common Bogus | 1.50 | @ | 3.00 |
| Screenings | 2.50 | @ | 3.50 |
| Glassine— | | | |
| Bleached | .11 | @ | — |
| Unbleached | .09 | @ | — |

(The following Quotations are Delivered New York)

| | | | |
|---|---|---|---|
| News per ton— | | | |
| Roll, contract | 40.00 | @ | — |
| Rolls, spot | 40.00 | @ | — |
| Sheets | 45.00 | @ | — |
| Kraft— | | | |
| No. 1 Northern | 4.12½ | @ | 4.75 |
| Standard | 4.00 | @ | — |
| Southern | 3.87½ | @ | — |
| Boards—per ton— | | | |
| News | 40.00 | @ | 45.00 |
| Chip | 37.50 | @ | 40.00 |
| Sgl. Mla. Ll. Chip | 47.50 | @ | 52.50 |
| Jute Lined Chip | 47.50 | @ | 52.00 |
| White Patent Coated | 60.00 | @ | 65.00 |
| Binders Boards | 67.00 | @ | 75.00 |

## Mechanical Pulp

(On Dock, Atlantic Ports)

| | | | |
|---|---|---|---|
| No. 1 Imported— | | | |
| Moist | 21.00 | @ | 22.00 |
| Dry | 21.00 | @ | 22.00 |
| (F.o.b. Mill) | | | |
| No. 1 Domestic and Canadian | 18.00 | @ | 24.00 |

## Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

| | | | |
|---|---|---|---|
| Bleached Sulphite (Domestic and Foreign)— | | | |
| Division 1 | 2.85 | @ | —* |
| Division 2 | 2.80 | @ | —* |
| Division 3 | 2.75 | @ | —* |
| Prime Qualities— | | | |
| Class 1. All Prime Easy Bleaching | 2.25 | @ | —* |
| Other Than Easy Bleaching— | | | |
| Class 2. Higher Than Standard | 2.20 | @ | —* |
| Class 3. Standard | 2.15 | @ | —* |
| Class 4. Lower than Standard | 2.10 | @ | — |
| (On Dock, Atlantic Ports) | | | |
| Kraft No. 1 | 1.70 | @ | 1.80 |
| Kraft No. 2 | 1.50 | @ | 1.60 |
| (F.o.b. Pulp Mill) | | | |
| Kraft Domestic | 1.70 | @ | 2.35 |
| (Delivered) | | | |
| Soda Bleached | 2.50 | @ | — |

*Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

## Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1 | 5.75 | @ | 6.00 |
| Silesias No. 1 | 3.75 | @ | 4.00 |
| New Unbleached | 6.25 | @ | 6.50 |
| New Soft Blacks | 3.00 | @ | 3.25 |
| Blue Overall | 3.50 | @ | 3.75 |
| Fancy | 2.50 | @ | 2.75 |
| Washables | 1.75 | @ | 2.00 |
| Mixed Khaki Cuttings | 3.00 | @ | 3.25 |
| O. D. Khaki Cuttings | 3.75 | @ | 4.00 |
| Men's Corduroy | 1.50 | @ | 1.75 |
| New Mixed Blacks | 2.50 | @ | 2.75 |

Old Rags

| | | | |
|---|---|---|---|
| White, No. 1— | | | |
| Repacked | 3.00 | @ | 3.50 |
| Miscellaneous | 2.75 | @ | 3.25 |
| White, No. 2— | | | |
| Repacked | 1.75 | @ | 2.25 |
| Miscellaneous | 1.50 | @ | 1.75 |
| Thirds and Blues— | | | |
| Repacked | 1.50 | @ | 1.75 |
| Miscellaneous | 1.25 | @ | 1.50 |
| Black Stockings | 2.50 | @ | 3.00 |
| Roofing Rags— | | | |
| No. 1 | 1.20 | @ | 1.30 |
| No. 2 | .90 | @ | 1.00 |
| No. 3 | .80 | @ | .85 |
| No. 4 | .75 | @ | .80 |
| No. 5A | .70 | @ | .75 |

## Foreign Rags

New Rags

| | | | |
|---|---|---|---|
| New Dark Cuttings | 1.60 | @ | 1.70 |
| New Mixed Cuttings | 1.75 | @ | 1.85 |
| New Light Silesias | 3.75 | @ | 4.00 |
| Light Flannelettes | 3.75 | @ | 4.00 |
| Unbleached Cuttings | 6.50 | @ | 6.75 |
| New White Cuttings | 6.50 | @ | 6.75 |
| New Light Oxfords | 3.25 | @ | 3.50 |
| New Light Prints | 2.75 | @ | 3.00 |

Old Rags

| | | | |
|---|---|---|---|
| No. 1 White Linens | 7.50 | @ | 8.00 |
| No. 2 White Linens | 6.50 | @ | 7.00 |
| No. 3 White Linens | 4.50 | @ | 5.00 |
| No. 4 White Linens | 2.25 | @ | 2.50 |
| No. 1 White Cotton | 4.25 | @ | 4.75 |
| No. 2 White Cotton | 3.25 | @ | 3.75 |
| No. 3 White Cotton | 2.50 | @ | 2.75 |
| No. 4 White Cotton | 1.90 | @ | 2.15 |
| Extra Light Prints | 2.00 | @ | 2.25 |
| Ord. Light Prints | 1.75 | @ | 1.85 |
| Med. Light Prints | 1.55 | @ | 1.65 |
| Dutch Blue Cottons | 1.75 | @ | 1.85 |
| French Blue Linens | 2.30 | @ | 2.40 |
| German Blue Linens | 2.15 | @ | 2.25 |
| German Blue Cottons | 1.70 | @ | 1.80 |
| Checks and Blues | 1.30 | @ | 1.40 |
| Linsey Garments | 1.40 | @ | 1.60 |
| Dark Cottons | 1.00 | @ | 1.10 |
| Old Shopperies | .95 | @ | 1.00 |
| New Shopperies | .90 | @ | 1.00 |
| French Blues | 1.70 | @ | 1.80 |

## Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | 1.50 | @ | 1.60 |
| Domestic | 1.40 | @ | 1.50 |
| Wool Tares, light | 1.20 | @ | 1.30 |
| Wool Tares, heavy | 1.20 | @ | 1.30 |
| Bright Bagging | 1.15 | @ | 1.25 |
| Manila Rope— | | | |
| Foreign | 1.85 | @ | 2.00 |
| Domestic | 1.75 | @ | 2.00 |
| Small Mixed Rope | 1.10 | @ | 1.35 |
| New Burlap Cut | 2.00 | @ | 2.25 |
| Hessian Jute Threads— | | | |
| Foreign | 2.60 | @ | 2.75 |
| Domestic | 2.80 | @ | 3.00 |

## Old Waste Papers

(F. o. b. New York)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Envelope Cuttings | 2.70 | @ | 2.80 |
| Ordinary Hard White No. 1 | 2.15 | @ | 2.25 |
| Hard White No. 2 | 1.95 | @ | 2.05 |
| Soft White No. 1 | 1.85 | @ | 1.95 |
| Flat Stock— | | | |
| Stitchless | .65 | @ | .75 |
| Over issue Mag. | .65 | @ | .75 |
| Solid Flat Book | .45 | @ | .50 |
| Crumpled No. 1 | .35 | @ | .40 |
| Solid Book Ledger | 1.50 | @ | 1.65 |
| Ledger Stock | 1.00 | @ | 1.10 |
| New B. B. Chips | .30 | @ | .35 |
| Manilas— | | | |
| New Env. Cut | 1.70 | @ | 1.80 |
| New Cuttings | 1.35 | @ | 1.45 |
| Print | Nominal | | |
| Bogus Wrapper | .40 | @ | .50 |
| Container | Nominal | | |
| Old Kraft Machine— | | | |
| Compressed bales | 1.10 | @ | 1.20 |
| News— | | | |
| No. 1 White News | 1.20 | @ | 1.30 |
| Strictly Overissue | .65 | @ | .70 |
| Strictly Folded | .35 | @ | .40 |
| No. 1 Mixed Paper | .17½ | @ | .20 |

1864 1935

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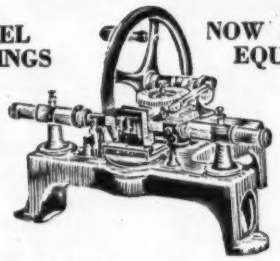

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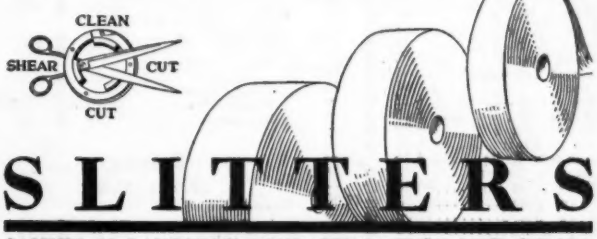
Florence, Mass.

# LANGSTON




# SLITTERS

SAMUEL M. LANGSTON COMPANY, CAMDEN, NEW JERSEY

# ENGLISH ECCO CLAYS CLAYS

ECCO CLAYS TRADE MARK

*Uniform—Superior—Dependable*

ENGLISH CHINA CLAYS SALES CORPORATION
551 FIFTH AVENUE, NEW YORK CITY

### Twines

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| **Course Polished—** | | | |
| India | .11¼ | @ | .13¾ |
| Belg. White Hemp | .12¼ | @ | .15¾ |
| India Compress | .11¼ | @ | .12¼ |
| **Fine Polished—** | | | |
| Fine India | .16 | @ | .20 |
| Special | .16 | @ | .18 |
| B. C. | .25½ | @ | .27½ |
| **Unpolished—** | | | |
| Box | .10 | @ | .10½ |
| Paper Makers | .07 | @ | .11½ |
| Tube Rope | .08 | @ | .13½ |
| Wall Paper | .09 | @ | .12½ |
| Wrapping | .12 | @ | .17 |
| Special | .12 | @ | — |
| Soft Fiber Rope | .10¼ | @ | .10¾ |

## CHICAGO

### Paper

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Rag Bond | .12 | @ | .50 |
| Water Marked Sulphite Bond | .06¾ | @ | .11 |
| Sulphite Bond | .05½ | @ | .11 |
| Superfine Writing | .18 | @ | .24 |
| No. 1 M. F. Book | .06½ | @ | .07¾ |
| No. 2 M. F. Book | .05¾ | @ | .06¾ |
| No. 1 S.&S.C. Book | .06¾ | @ | .07¾ |
| No. 2 S.&S.C. Book | .05¾ | @ | .06½ |
| Coated Book | .07 | @ | .12 |
| Coated Label | .07 | @ | .08½ |
| No. 1 Manila | .04½ | @ | .05¼ |
| No. 1 Fibre | .04¾ | @ | .05¼ |
| No. 2 Manila | .04¼ | @ | .04¾ |
| Butcher's Manila | .03¼ | @ | .03¾ |
| No. 1 Kraft | 4.75 | @ | 5.00 |
| Southern Kraft | 3.88 | @ | 4.25 |
| No. 2 Kraft | 3.88 | @ | 4.25 |
| Wood Tag Boards | .04¼ | @ | .06¼ |
| Sulphite Screenings | .03 | @ | .03½ |
| Manila Tissue | .05¾ | @ | .07 |
| White Tissue | .07 | @ | .09 |

(Delivered Central Territory)

| | | | |
|---|---|---|---|
| News, per ton— | | | |
| Rolls, contract | 41.00 | @ | — |
| Sheets, open | 46.00 | @ | 48.50 |
| Boards, per ton— | | | |
| Plain Chip | 46.50 | @ | — |
| Solid News | 50.00 | @ | — |
| Manila Lined Chip | 55.00 | @ | — |
| Patent coated | 65.00 | @ | — |
| Container Lined— | | | |
| 85 Test, per 1000 sq. ft. | | | 1.70 |
| 100 Test, per 1000 sq. ft. | | | 1.85 |

### Old Papers

(F. o. b. Chicago)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 White Envelope cuttings | 1.70 | @ | 2.00 |
| No. 1 Hard White | 1.40 | @ | 1.65 |
| No. 1 Soft White | 1.25 | @ | 1.50 |
| Ledger & Writings | .70 | @ | .80 |
| Solid Books | .60 | @ | .70 |
| Blanks | 1.00 | @ | 1.05 |
| Krafts | .80 | @ | .90 |
| New Kraft Cuts | 1.20 | @ | 1.30 |
| Manila Env. Cuts | 1.25 | @ | 1.30 |
| Ex. No. 1 Manila | .90 | @ | 1.00 |
| Print Manila | .40 | @ | .50 |
| Overissue News | .40 | @ | .45 |
| Old Newspapers— | | | |
| No. 1 | .30 | @ | .35 |
| Mixed Papers— | | | |
| No. 1 | .15 | @ | .20 |
| Roofing Stocks— | | | |
| No. 1 | 30.00 | @ | — |
| No. 2 | 28.00 | @ | — |

## PHILADELPHIA

### Paper

(Delivered Philadelphia)

| | | | |
|---|---|---|---|
| Bonds | .05-9/10 | @ | .38 |
| Ledgers | .06 9/10 | @ | .40 |
| Writings— | | | |
| Fine No. 3 | .05 | @ | .06 |
| Superfine | .10 | @ | .18 |
| Extra Fine | .15 | @ | .20 |
| Fine | .15 | @ | .24 |
| Fine, No. 2 | .10 | @ | .25 |
| Book, M. F. | .05¼ | @ | .06¼ |
| Book, S. S. & C. | .05 | @ | .07½ |
| Book, Coated | .06½ | @ | .09 |
| Coated Lithograph | .06¾ | @ | .08½ |
| Label | .07 | @ | .11 |
| No. 1 Jute Manila | 6.25 | @ | — |
| Manila Sul., No. 1 | 5.25 | @ | — |
| Manila No. 2 | 3.00 | @ | — |
| No. 1 Kraft | 5.00 | @ | — |
| Southern Kraft | 4.75 | @ | — |
| Common Bogus | .03 | @ | .04½ |
| News Print Rolls | 40.00 | @ | — |
| Straw Board | 40.00 | @ | 45.00 |
| News Board | 40.00 | @ | — |
| Chip Board | 37.50 | @ | — |
| Wood Pulp Board | 70.00 | @ | 85.00 |
| Binder Boards— | | | |
| No. 1, per ton | 75.00 | @ | 80.00 |
| No. 2, per ton | 70.00 | @ | 75.00 |
| Carload lots | 65.00 | @ | 70.00 |
| Tarred Felts— | | | |
| Regular | 52.25 | @ | 54.25 |
| Slaters (per roll) | .84 | @ | .94 |
| Best Tarred, 1-ply (per roll) | 1.95 | @ | 2.10 |
| Best Tarred, 2-ply (per roll) | 1.50 | @ | 1.60 |
| Best Tarred, 3-ply | 2.00 | @ | 2.25 |

### Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1. | .03½ | @ | .04 |
| New White, No. 2. | .02½ | @ | .04 |
| Light Silesias | .02½ | @ | .03 |
| Silesias, No. 1 | .02 | @ | .03½ |
| Black Silesias, soft | .02½ | @ | .03 |
| New Unbleached | .05 | @ | .05½ |
| Washable, No. 1 | .01½ | @ | .02 |
| Blue Overall | .03½ | @ | .04 |
| Cottons—According to grades— | | | |
| Washable, No. 2 | .02½ | @ | .03 |
| New Blue | .01½ | @ | .03 |
| Fancy | .01½ | @ | .03 |
| New Black Soft | .02 | @ | .04 |
| New Light Seconds | .01¾ | @ | .02 |
| New Dark Seconds | 1.50 | @ | 1.75 |
| Khaki Cuttings— | | | |
| No. 1 O.D. | .03 | @ | .04 |
| No. 2 Mixed | .03 | @ | .04 |
| Corduroy | .02 | @ | .03 |
| New Canvas | .03½ | @ | .04½ |
| New Black Mixed | .02½ | @ | .03½ |

### Domestic Rags (Old)

| | | | |
|---|---|---|---|
| White No. 1— | | | |
| Repacked | 2.50 | @ | 3.50 |
| Miscellaneous | 1.75 | @ | 2.25 |
| M. G. | 3.00 | @ | 3.75 |
| Thirds and Blues— | | | |
| Miscellaneous | 1.00 | @ | 1.50 |
| Repacked | 1.50 | @ | 2.00 |
| Black Stockings (Export) | 2.00 | @ | 3.50 |
| Roofing Stock— | | | |
| Foreign No. 1 | .50 | @ | .75 |
| Repacked | .70 | @ | .85 |

### Bagging

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Gunny, No. 1— | | | |
| Foreign | 1.25 | @ | 1.30 |
| Domestic | 1.50 | @ | 1.75 |
| Manila Rope | 2.00 | @ | 2.25 |
| Sisal Rope | 1.25 | @ | 1.50 |
| Mixed Rope | 1.00 | @ | 1.10 |
| Scrap Burlaps— | | | |
| No. 1 | 1.25 | @ | 1.50 |
| No. 2 | .80 | @ | 1.00 |
| Wool Tares, heavy | 2.75 | @ | — |
| Mixed Strings | 1.15 | @ | 1.25 |
| No. 1 New Light Burlap | 2.25 | @ | 2.50 |
| New Burlap Cuttings | 2.00 | @ | 2.25 |

### Old Papers

(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 2.25 | @ | 2.30 |
| No. 2 Hard White | 1.90 | @ | 2.00 |
| No. 1 Soft White | 1.80 | @ | 1.85 |
| No. 2 Soft White | 1.25 | @ | 1.30 |
| No. 1 Mixed | — | @ | .75 |
| Solid Ledger Stock | 1.50 | @ | 1.60 |
| Writing Paper | 1.00 | @ | 1.10 |
| No. 1 Books, heavy | .55 | @ | .60 |
| No. 1 New Manila | 1.35 | @ | 1.40 |
| Print Manila | .50 | @ | .60 |
| Container Manila | .45 | @ | .50 |
| Old Kraft | 1.00 | @ | — |
| No. 1 Mixed Paper | .20 | @ | — |
| Straw Board Chip | .20 | @ | — |
| Binders Board Chip | .20 | @ | — |
| Corrugated Board | .40 | @ | — |
| Overissue News | .50 | @ | — |
| Old Newspapers | .30 | @ | — |

## BOSTON

### Paper

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ledgers— | | | |
| Sulphite | .06 | @ | .12½ |
| Rag Content | .12 | @ | .30 |
| All Rag | .36 | @ | .52½ |
| Bonds— | | | |
| Sulphite | .07¾ | @ | .11 |
| Rag Content | .12 | @ | .30 |
| All Rag | .36 | @ | .65 |
| Writings | .06½ | @ | .20 |
| Superfines | .11 | @ | .31 |
| Book, Super | .06 | @ | .09 |
| Book, M. F. | .05½ | @ | .08½ |
| Book, Coated | .08½ | @ | .18 |
| Coated Litho | .09 | @ | .12 |
| Label | .09½ | @ | .15 |
| Jute Manila No. 1 | .11 | @ | .13 |
| Manila, Sul. No. 1 | .04¾ | @ | .06½ |
| Manila, Sul. No 2 | .03¾ | @ | .04½ |
| No. 1 Kraft | .04¾ | @ | .05 |
| No. 2 Kraft | .04½ | @ | .04¾ |

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Southern Kraft | .03¾ | @ | .04½ |

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)

| | | | |
|---|---|---|---|
| Common Bogus | .02 | @ | .02¼ |

(Delivered New England points)

| | | | |
|---|---|---|---|
| News Print Rolls | 39.50 | @ | — |
| Straw Board, rolls | .009 | — | @35.00 |
| Straw Board in Sheets, basis 35s to 70s | — | @ | 40.00 |
| Filled News Board | 40.00 | @ | 45.00 |
| Chip Board | 37.50 | @ | 40.00 |
| Chip Board (Creasing) | 37.50 | @ | 40.00 |
| Single Manila Lined Chip | 47.50 | @ | 52.50 |
| Single White, Patent Coated News Board (Bender) | 55.00 | @ | 65.00 |
| Wood Pulp Board | 70.00 | @ | 75.00 |
| Binder Boards (Standard Grade) | 67.00 | @ | 75.00 |

### Old Papers

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 2.00 | @ | 2.20 |
| No. 1 Soft White | 1.75 | @ | 1.90 |
| No. 2 Mixed | .75 | @ | .80 |
| Solid Ledger Books | 1.75 | @ | — |
| Overissue Ledger Stock | 1.15 | @ | 1.30 |
| Mixed Ledgers | .95 | @ | 1.05 |
| No. 1 Books, heavy | .55 | @ | .65 |
| No. 1 Books, light | .50 | @ | .60 |
| Crumpled Stitchless Book Stock | .50 | @ | .60 |
| Manila Env. Cuttings | 1.25 | @ | 1.30 |
| No. 1 Old Manila | .50 | @ | .55 |
| White Blank News | 1.20 | @ | 1.25 |
| No. 1 Kraft | .85 | @ | .95 |
| No. 1 Mixed Papers | .20 | @ | — |
| Print Manila | .40 | @ | .45 |
| Overissue News | .45 | @ | .50 |
| Old Newspapers | .22½ | @ | .30 |
| Box Board Chips | .— | @ | .25 |
| Corrugated boxes | .25 | @ | .32½ |
| Screening Wrappers | .45 | @ | .55 |

### Bagging

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Manila Rope— | | | |
| Foreign | 1.75 | @ | 1.90 |
| Domestic | 1.90 | @ | 2.00 |
| Transmission Rope | .90 | @ | 1.00 |
| Mixed Strings | .17½ | @ | .30 |
| Jute Rope | 1.35 | @ | 1.40 |
| Jute Carpet Threads | .65 | @ | .70 |
| Gunny No. 1— | | | |
| Foreign | 1.50 | @ | 1.60 |
| Domestic | 1.25 | @ | — |
| Bleachery Burlap | 4.00 | @ | 4.50 |
| Scrap Burlap | 1.05 | @ | 1.10 |
| Scrap Sisal | 1.00 | @ | 1.10 |
| Scrap Sisal for Shredding | 1.10 | @ | 1.25 |
| Wool Tares, heavy | 1.25 | @ | 1.30 |
| New Burlap Cuttings | 1.45 | @ | 1.50 |
| Australian Wool Pouches | 2.00 | @ | 2.25 |
| Heavy Baling Bagging | 1.40 | @ | 1.50 |
| Paper Mill Bagging | .90 | @ | 1.10 |
| Bagging No. 2 | .50 | @ | .55 |

### Domestic Rags (New)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New Light Prints | .01¾ | @ | .02 |
| New White No. 1. | .05½ | @ | .06 |
| New White No. 2. | .03½ | @ | .04 |
| Silesias No. 1 | .04 | @ | — |
| New Black Silesias | .02½ | @ | .03 |
| New Unbleached | .05½ | @ | .06 |
| Blue Cheviot | — | @ | 4.65 |
| Fancy | .0185 | @ | .0195 |
| Washable | .0165 | @ | .0170 |
| Cottons—According to grades— | | | |
| Blue Overalls | — | @ | .03¾ |
| New Black, soft | .04 | @ | .04½ |
| Khaki Cuttings | .03¾ | @ | .03¾ |
| O. D. Khaki | .03 | @ | .03¾ |
| Corduroy | .01¾ | @ | .02 |
| New Canvas | — | @ | .05 |
| B.V.D. Cuttings | — | @ | .06¼ |

### Domestic Rags (Old)

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Canvas | .04½ | @ | — |
| White No. 1— | | | |
| Repacked | .— | @ | 3.00 |
| Miscellaneous | 2.50 | @ | 2.75 |
| White No. 2— | | | |
| Repacked | 2.00 | @ | 2.75 |
| Miscellaneous | 2.00 | @ | 2.25 |
| Twos and Blues | 1.25 | @ | 1.50 |
| Thirds and Blues | | | |
| Repacked | 2.00 | @ | 2.75 |
| Miscellaneous | 2.00 | @ | 2.25 |
| Black Stockings | 2.50 | @ | 3.00 |
| Roofing Stock | | | |
| No. 1 | 1.05 | @ | 1.12½ |
| No. 2 | .90 | @ | 1.03 |
| No. 3 | .78 | @ | — |

### Foreign Rags

(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Dark Cottons | 1.00 | @ | 1.00 |
| New White Shirt Cuttings | 5.50 | @ | 6.00 |
| Dutch Blues | 2.00 | @ | 2.50 |
| New Checks & Blues | 2.50 | @ | 3.00 |
| Old Fustians | 1.55 | @ | 1.60 |
| Old Linsey Garments | 1.25 | @ | 1.35 |

## TORONTO

### Paper

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bond— | | | |
| No. 1 Sulphite | .10¼ | @ | — |
| No. 2 Sulphite | .08½ | @ | — |
| No. 1 Colored | .10¼ | @ | — |
| No. 2 Colored | .09 | @ | .10 |
| Ledgers (sulphite) | | | |
| Ledgers, No. 1 | .34½ | @ | — |
| Ledgers, No. 2 | .25½ | @ | — |
| Writing | .09 | @ | .09½ |
| Book— | | | |
| No. 1 M. F. (Carloads) | 6.20 | @ | — |
| No. 3 M. F. (Carloads) | 5.70 | @ | — |
| No. 4 M. F. (carloads) | 4.75 | @ | — |
| No. 1 S. C. (carloads) | 6.65 | ½ | — |
| No. 3 S. C. (carloads) | 6.20 | @ | — |
| No. 4 S. C. (carloads) | 5.20 | @ | — |
| No. 1 Coated and Litho | 12.00 | @ | — |
| No. 2 Coated and Litho | 10.50 | @ | — |
| No. 3 Coated and Litho | 9.50 | @ | — |
| Coated tinted | 14.00 | @ | — |
| Wrapping— | | | |
| Rag Brown | 4.25 | @ | — |
| White Wrap | 2.22½ | @ | — |
| "B" Manila | 4.75 | @ | — |
| No. 1 Manila | 5.25 | @ | — |
| Fiber | 5.25 | @ | — |
| Kraft, M. F. | 5.75 | @ | — |
| Kraft No. 2 | 5.25 | @ | — |

(F.O.B. Cars Toronto)

| | | | |
|---|---|---|---|
| News, per ton— | | | |
| Rolls (contract) | 39.50 | @ | — |
| Sheets | 42.00 | @ | — |

### Pulp

(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ground Wood | 18.00 | @ | 20.00 |
| Sulphite easy bleaching | 40.00 | @ | — |
| Sulphite, news grade | 38.00 | @ | — |
| Sulphite, bleached | 50.00 | @ | 55.00 |
| Sulphate | 50.00 | @ | — |

### Old Waste Paper

(In carload lots, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Env. Cut | 2.00 | @ | 2.30 |
| Soft White | 1.60 | @ | 1.90 |
| White Blk. News | 1.25 | @ | 1.40 |
| Book and Ledger— | | | |
| Flat Magazine and Book Stock (old) | .90 | @ | 1.00 |
| Light and Crumpled Book Stock | .80 | @ | .90 |
| Ledgers and Writings | 1.00 | @ | 1.05 |
| Manilas— | | | |
| New Manila Cut | 1.25 | @ | 1.50 |
| Printed Manilas | .70 | @ | .60 |
| Kraft | 1.25 | @ | 1.50 |
| News and Scrap— | | | |
| Strictly Overissue | .80 | @ | — |
| Strictly Folded | .60 | @ | — |
| No. 1 Mixed Paper | .50 | @ | — |

### Domestic Rags

(Price to mills, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| No. 1 White Shirt Cuttings | .06 | @ | .06½ |
| Fancy Shirt Cuttings | .02¼ | @ | .02½ |

ANNUAL REVIEW AND CONVENTION NUMBER

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# PAPER TRADE JOURNAL

Vol. C FEBRUARY 21, 1935 No. 8

EXCELSIOR Woolen Co. Camden, Me. FELTS & JACKETS

1864 - 1935

"Excelsior"

FELTS

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**MORE MILLS USE SEYBOLD PAPER CUTTERS THAN ALL OTHER MAKES COMBINED**


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# UP GO WAGES SO DOWN WITH COSTS

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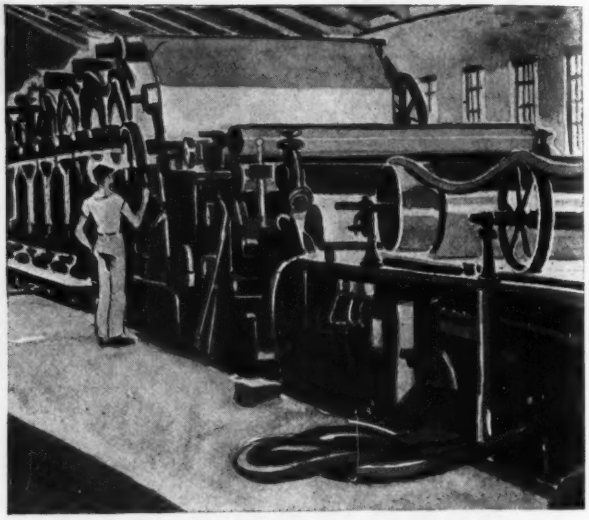
THE BELOIT WAY IS THE MODERN WAY

BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS.

# BELOIT

*Beloit Iron Works, Beloit, Wis., U.S.A. Founded 1858*



# YOUR *15 Years* ARE UP!

*Only* 19% *of the paper machines in operation today can be said to be modern. What of the other* 81%, *purchased during the years* before 1920? *Did you know that any paper machine requires a certain amount of rebuilding at the end of* 15 *years?*

* * *

Eight out of every ten firms who operate Fourdriniers and other paper machines have on their hands a piece of equipment that was installed more than 15 years ago. ¶ Fifteen years is the maximum period during which any paper machine will operate at highest efficiency without rebuilding of major parts. ¶ S & W wishes to call to your attention the fact that, for many of you, the 15 years are up. Perhaps, already, your machinery is operating below par, causing you an extra operating expense that *could* be avoided.

*The* CONSULTING ENGINEER *has a Part in the Picture*

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"Modernization Service" is a new service instituted this year by S & W, designers and builders of the two widest Fourdriniers operating in the world today on the finest tissues and condenser papers. Without charge or obligation, a "Modernization Engineer" will work with you or your consulting engineer in checking up on your machinery, and recommending economical methods for profit-making rehabilitation. We suggest you write us, scheduling an appointment. In the meantime, ask us to send you "Carrying the Torch," a description of our engineering and production facilities.

*Builders of straight, Edward and Harper type Fourdriniers; cylinder machines; wet machines; binders' board machines; leather board machines.*

★

# *The* SMITH & WINCHESTER *Manufacturing Company*

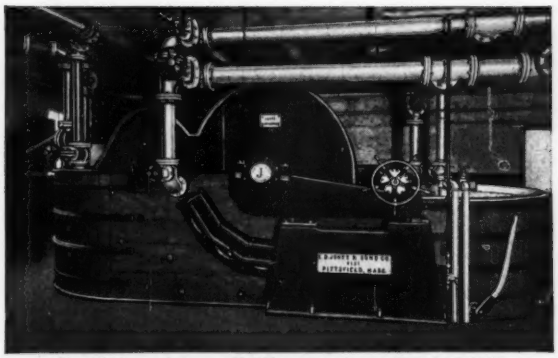
1828

PLANT AND OFFICES AT SOUTH WINDHAM, CONNECTICUT

1110

## *Successful Mill Performance Proves Value of*

# *The New* JONES MULTIBEATER...



*Installation of Jones Multibeater in large Canadian Mill*

**The Production Manager of one mill states:**

*"The Multibeater is the nearest thing to a real beating machine that I have run across. I could not believe the power savings figures which were obtained during tests, but we rechecked by various methods and find that they have indicated correctly. It seems too good to be true."*

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You owe it to yourself to learn more about the outstanding advantages of the MULTIBEATER. Our sales engineer in your territory gladly will give you the facts, without obligation. Why not write us today?

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**Behind this trade mark is everything essential to make good felts — experience, design, plant control and reputation.**

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**Your felt problems will receive our careful attention. Let us help solve them for you.**

*Quality ... Service Uniformity Finish*

**APPLETON WOOLEN MILLS**

**Appleton, Wisconsin**

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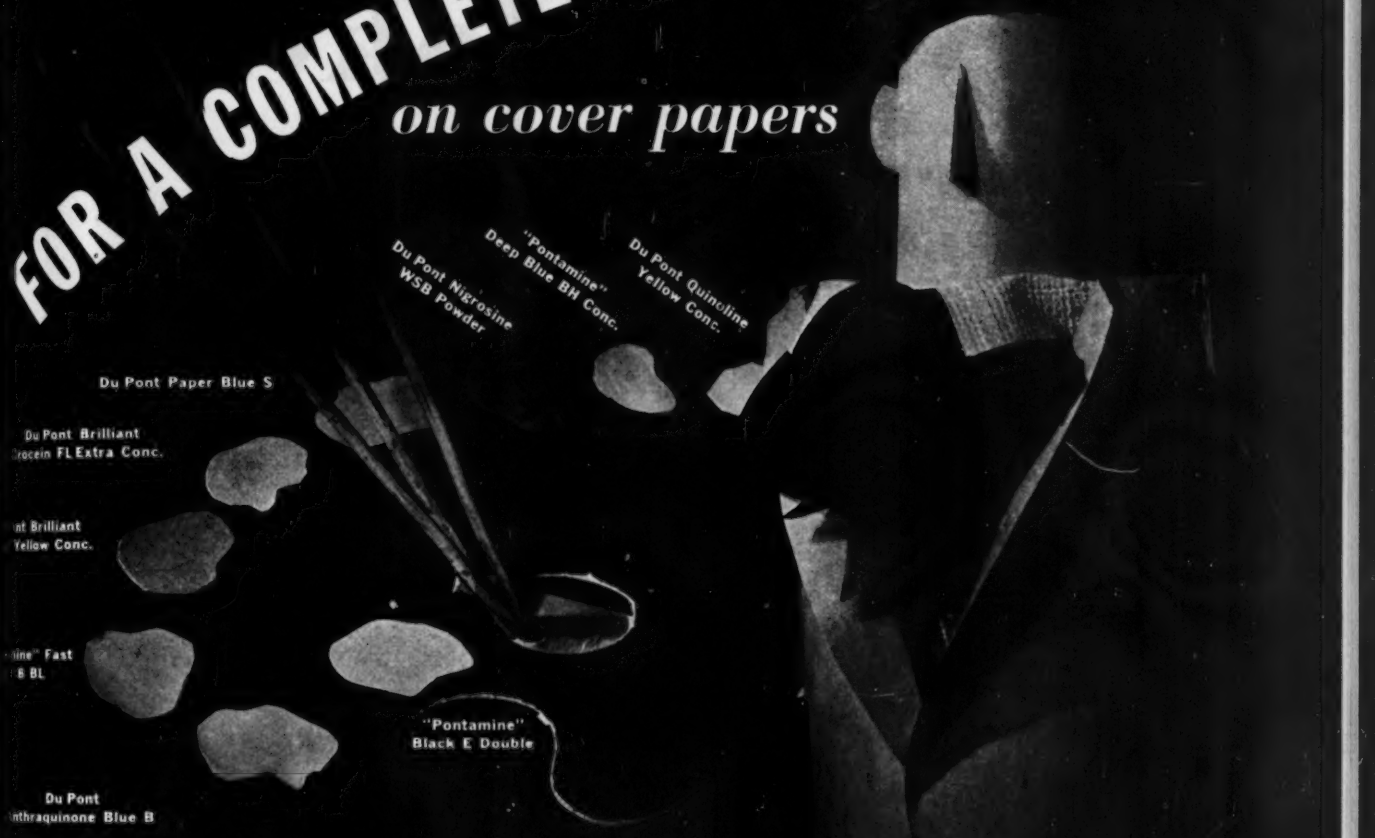
## *on cover papers*


Du Pont Quinoline Yellow Conc.
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**These du Pont Dyestuffs possess good fastness to light and are suitable for the production of a complete range of shades on all grades of cover paper:**

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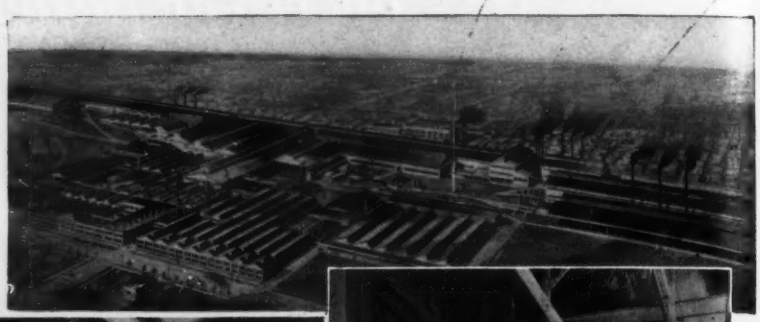
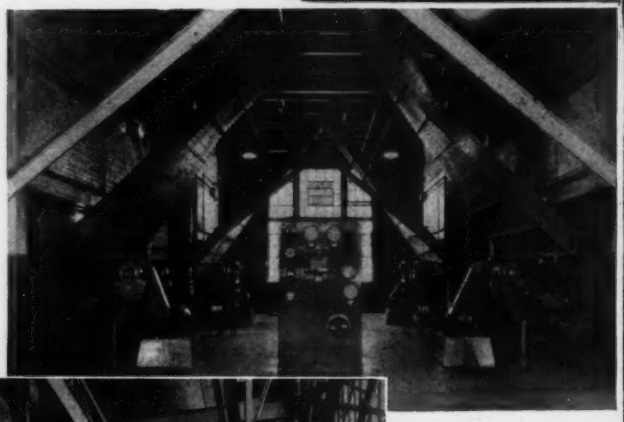
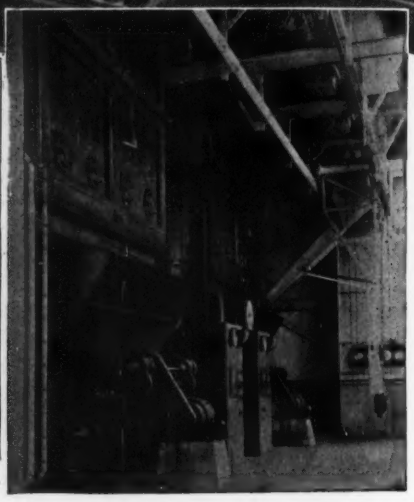
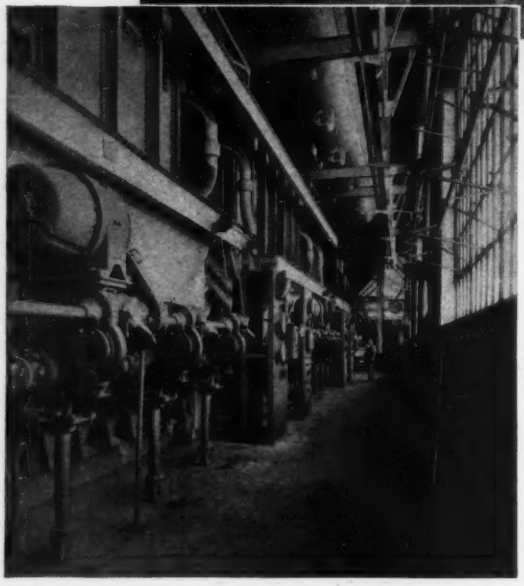
## Chosen by the Leaders









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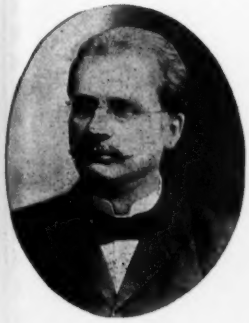
# AMERICAN ENGINEERING

# DE LAVAL

## A Pioneer in High Pressure Steam



DE LAVAL was a pioneer in the invention and perfection of the steam turbine, in high pressure steam, and in the use of the helical speed reducing gear.

In 1882 he constructed his first steam turbine.

In 1894 he patented the diverging steam nozzle.

In 1897 he operated at the Stockholm Exposition six geared turbine generating units under steam pressures of 1400 to 3000 lb. and at 750° F.

In 1907 he designed a triple expansion turbine with two-pinion, double helical gear for ship propulsion.

•

The De Laval Steam Turbine Company was established in America in 1901 and has introduced REVOLUTIONARY IMPROVEMENTS in:

CENTRIFUGAL PUMPS.

CENTRIFUGAL BLOWERS and COMPRESSORS.

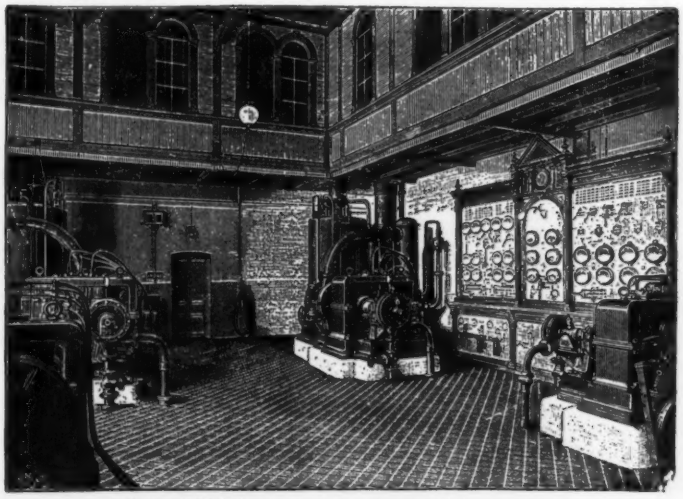
SPEED REDUCING GEARS (of both helical and worm types).

GEARED TURBINES for generator and pump drives and for ship propulsion.

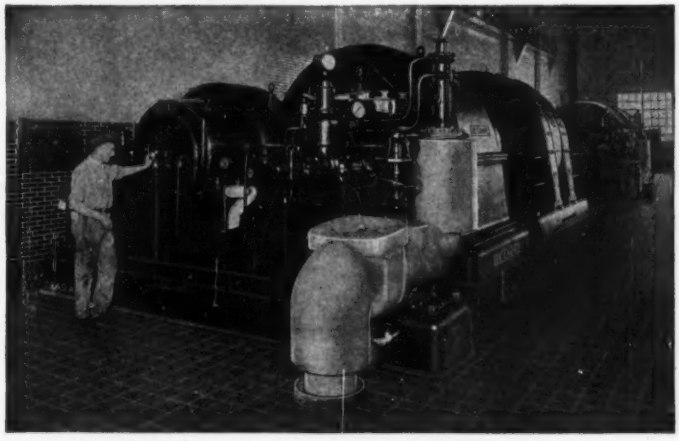
ROTARY DISPLACEMENT PUMPS for motor and turbine speeds and pressures up to 500 lb. and over.

PROPELLER PUMPS for delivering large volumes against low heads at motor and turbine speeds, and the

BAUER-WACH EXHAUST TURBINE SYSTEM for rejuvenating marine power plants.



De Laval 3000 lb. steam pressure geared turbo-generators in 1897 Stockholm Exposition.



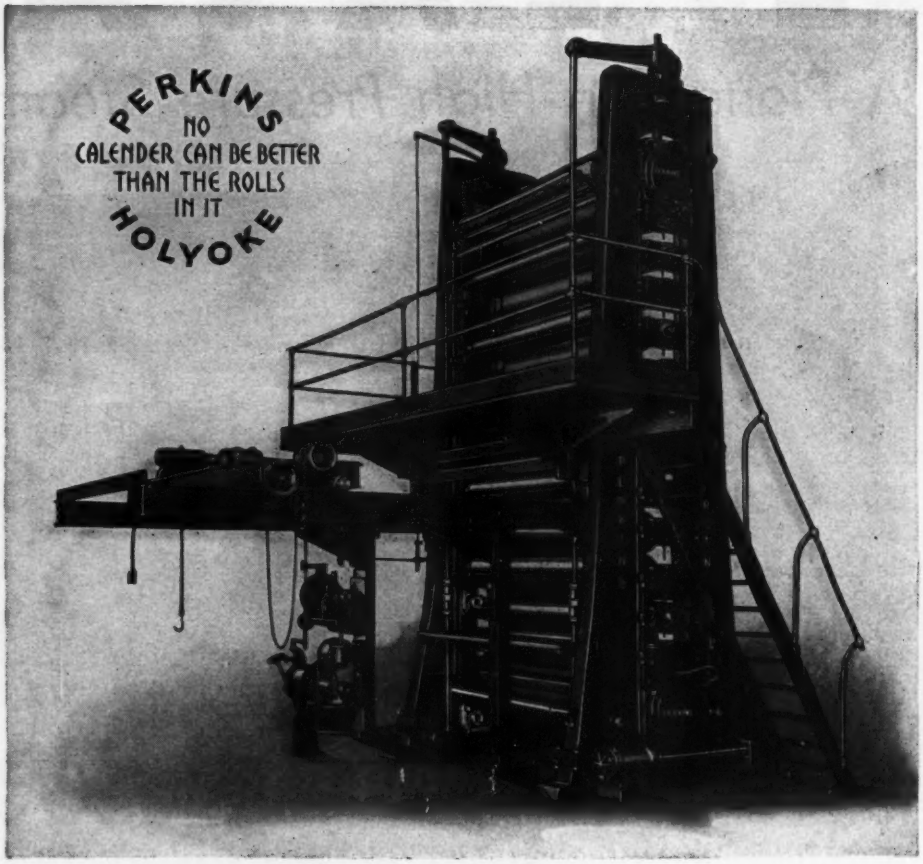
One of eight De Laval 4000 kw. geared turbine house generator units installed by a large Edison Company.

•

The De Laval Company has also perfected the PRODUCTION OF STEAM PLANT EQUIPMENT ON A LIMIT GAGE BASIS to insure interchangeability and quick replacements, which, together with skillful design and the use of the best materials, results in low cost of upkeep. EFFICIENCIES and other characteristics, as also perfect functioning, are GUARANTEED and are demonstrated by tests at the works.

3166

**DE LAVAL STEAM TURBINE CO., TRENTON, N. J.**

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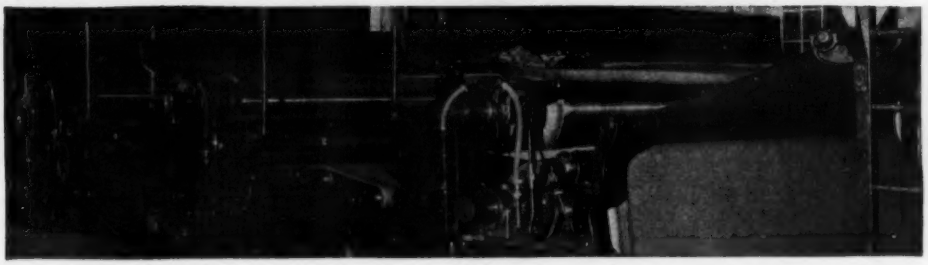
# THE VALUE OF EXPERIENCE



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In the majority of cases the record performance and efficiency of rubber covered rolls depends on design—and consistently correct design is a result of accumulated knowledge and facts gained only by long experience. Manhattan Rubber Covered Rolls successfully perform the tasks assigned to them because they are correctly designed to meet the operating conditions of the particular work they are to handle . . .

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*Manhattan Rolls also made in Fox River Valley Factory at Neenah, Wisconsin*

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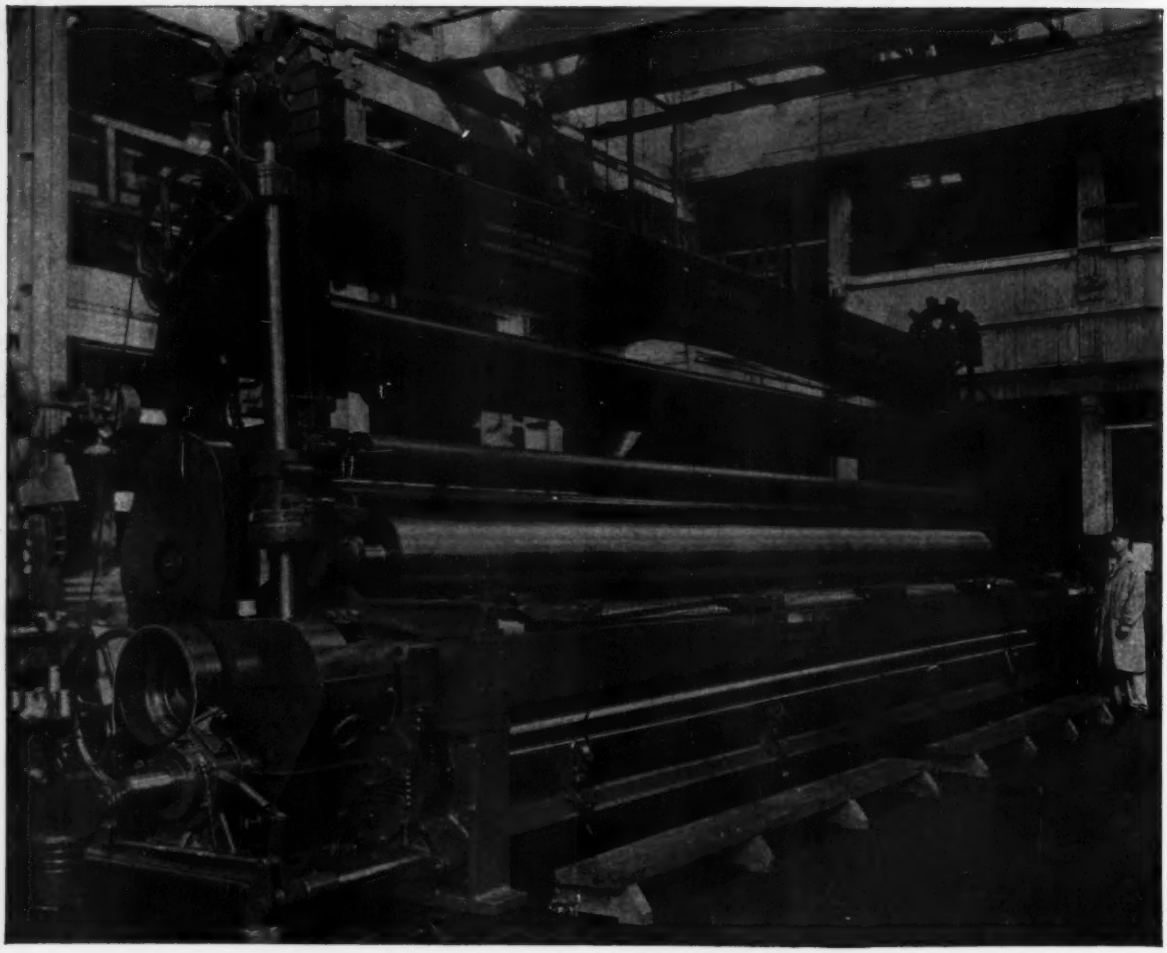

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## handles sheet 310" wide

**CAMACHINE 20 as illustrated above has been shipped to Sittingbourne, Kent, England, where it is being installed in connection with the world's largest Fourdrinier newsprint machine at the mills of Edward Lloyd Limited.**

**The winder will operate at speeds up to 3,000 feet per minute—not much short of 35 miles an hour. It will wind rolls up to 40" in diameter, and the finished roll will weigh approximately 10,000 lbs., but what is more to the point, the rolls produced will be of the high standard required for use on modern high-speed newspaper web presses.**

**CAMACHINE 20 produces rolls, which are uniformly wound from core to circumference and contain a greater amount of paper per given diameter roll. Rolls of the character produced with this winder will stand the jumps and jolts of shipment and handling, and arrive at the pressroom in good condition. Furthermore, they are cheaper to ship, for a carload contains more actual weight of paper.**

**Such rolls, containing as they do more paper per roll, insure less roll changes on the press, and, being uniformly wound with firmly set cores, will feed smoothly and evenly in a steady, level flow to the press at the top speed of which the press is capable.**

**Cameron Machine Company also build a complete line of Winders and Rewinders for paper and board of all kinds. Send for illustrated literature.**

***Cameron Winders wind rolls wire side out if required.***

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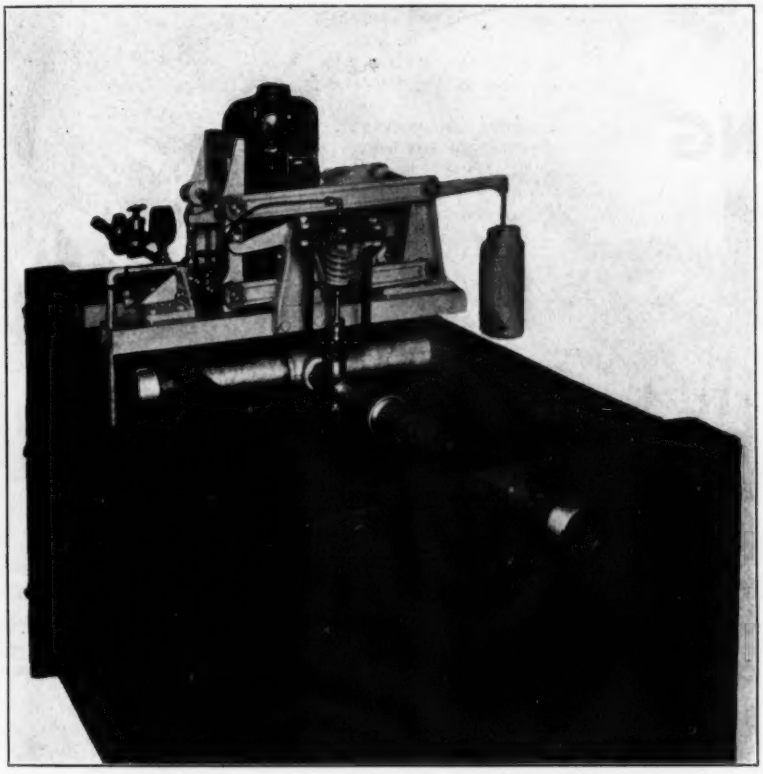

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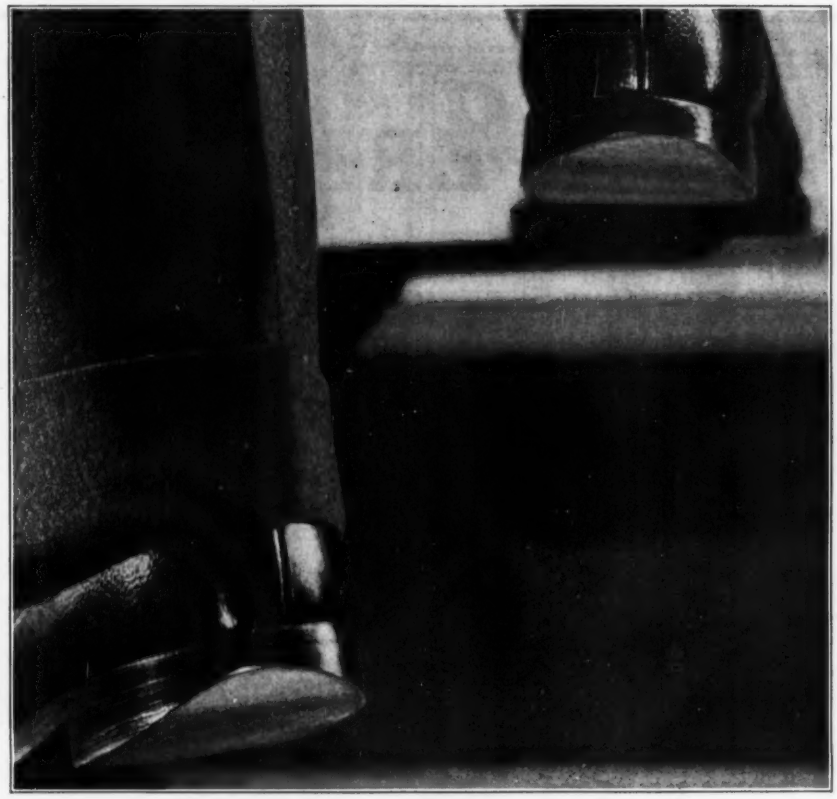

# A down-at-heel plant loses money

• There are industrial plants today tottering unsteadily on run-over heels. Production is halting, costs are excessive. It's time for a trip to the cobbler.

To the executive who is responsible for the continued health of a business enterprise, the plant engineer's requests for replacements grow, of their own accord, into imperative demands. In too many plants the fine balance between economic retrenchment and plant impairment has been lost. To save a dollar too often means to lose a thousand. It's time to check up!

A large clothing factory increased daily cloth production 30% by installing Crane steam traps to maintain proper temperature of machines without fluctuation. In other plants—in your plant—there may be new and modern equipment unable to earn its way because of inadequate piping, worn valves, or leaky fittings.

Ask your engineer for a report on your plant. Crane engineers will gladly cooperate with your consultants to the end of detecting loss and waste, and recommending the least costly means of rehabilitation. We will send you, without obligation, our plant check list. Write for it today!

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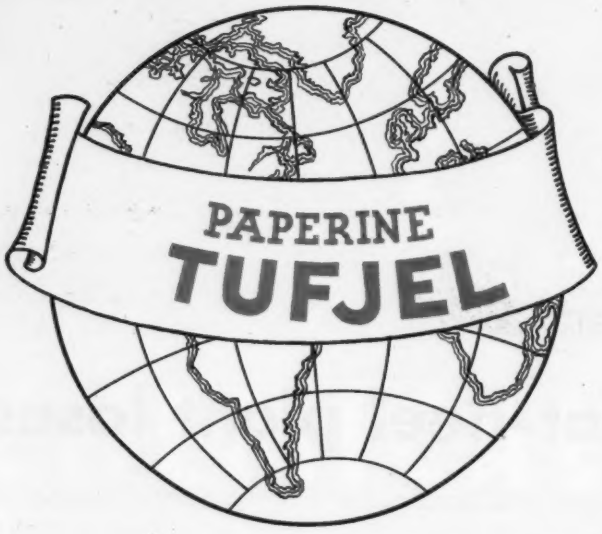


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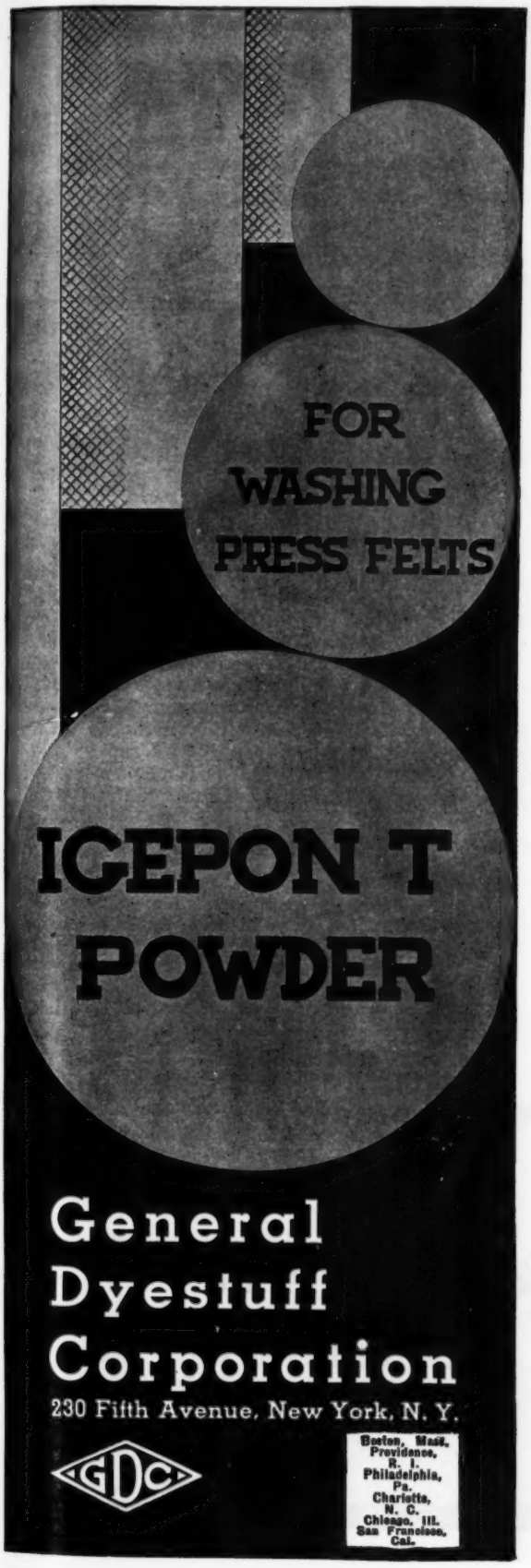


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SIXTY-THIRD YEAR

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